AMERICAN GAS ASSOCIATION

Monthly

APRIL
1961

Other gas investors with Miss Meade at New York's International Airport are (left) Dick Kelso, Clarksburg, W. Va., and Edward Bellows, Assistant Manager, International Hotel

"YES INDEED, JULIA MEADE... we cook with Gas at New York's International Hotel," says Executive Chef Charles Peponakis. "Our menu features dishes from seven countries...and in any language, my fine Gas equipment gives the exact results I'm after." *American Gas Association* **IN ANY LANGUAGE... GAS IS GOOD BUSINESS!**

• This ad appeared in COMMERCIAL KITCHEN & SUPPLIES, November, 1960

A pipeline river crossing is among the more dramatic of gas industry scenes. Photo from The Columbia Gas System, Inc.

IT'S a fine healthy trend, though it creates a minor reporting problem. . . . We're referring to the consistent tendency of A. G. A. conferences and conventions to chalk up new attendance records. . . . At the risk of monotony, we can hardly do less than keep on mentioning this fact whenever a meeting does establish a new high head-count. . . . However, even though more gas industry people than ever are taking advantage of these brain-stretching sessions, there still are many who don't find it feasible to attend every meeting. . . . It is for these desk-bound folk that the MONTHLY makes it a point to cover the major conferences as thoroughly as possible. . . . We like to feel that the best substitute for several days at a conference is a few minutes spent attending by proxy through the pages of the MONTHLY. . . . For example, take the General Management Conference in Charleston last month . . . the breadth of subjects covered left us just enough breath to tell you about it (on page 10). . . . And there was the Mid-Pacific Merchandising Conference in Honolulu (page 12). . . . That story came in the mail, courtesy of Miss Catherine Cunningham, Honolulu Gas Company. . . . Our vicarious enjoyment in reading it was just short of the pleasure we would have had from making the trip to Hawaii ourselves. . . . In line with our concurrent policy of reporting research and new product developments, we also have in this issue stories on new gas air conditioning units (pages 9, 23), and on applications of gas infra-red heaters (page 19).

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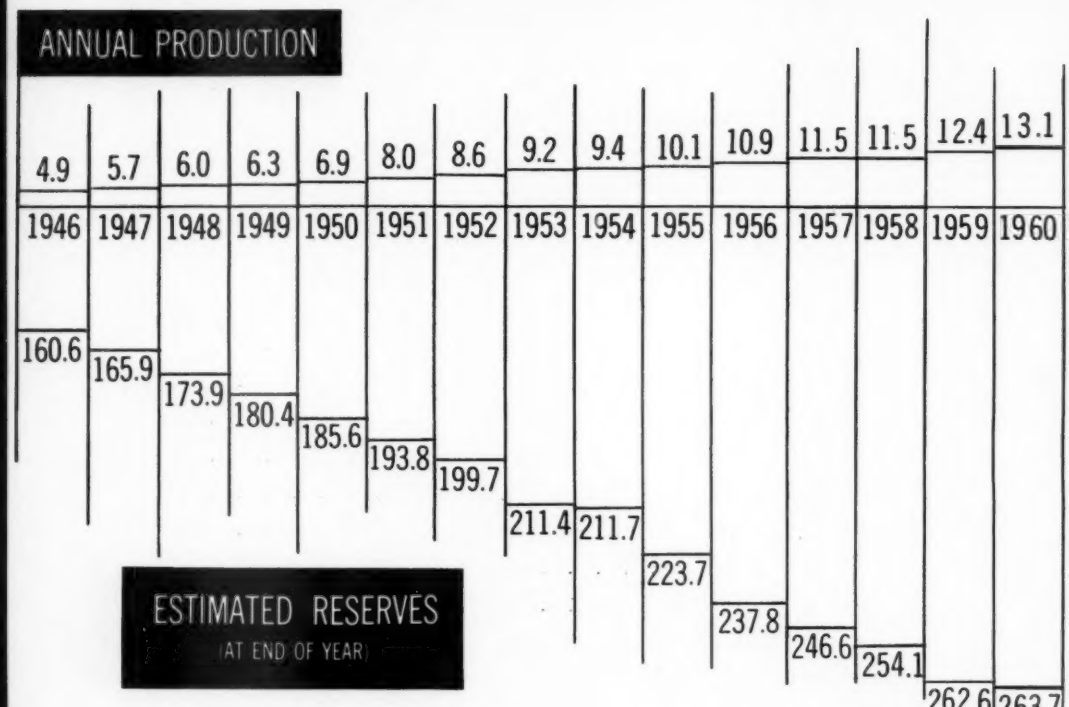
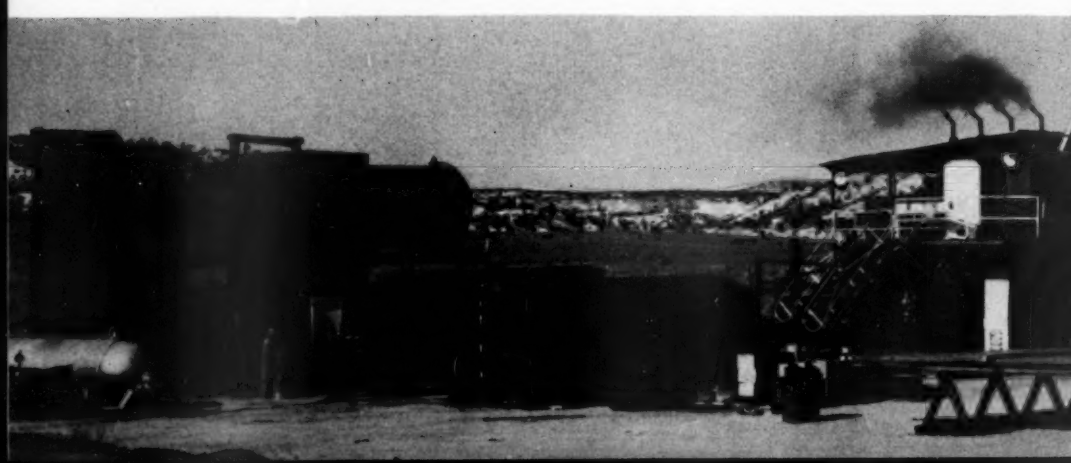
NATURAL GAS RESERVES AND PRODUCTION IN THE U. S. (IN TRILLION CUBIC FEET)





Discoveries of natural gas once again boost total proved reserves to new record high despite highest withdrawals in history

Gas reserves continue to climb

Natural gas reserves in the United States have reached an all-time high of 263.7 trillion cubic feet despite another record-breaking year of production.

In its annual report released jointly with the American Petroleum Institute, A. G. A. disclosed in March that new reserve discoveries were the third highest on record. Discoveries of new fields and additional pools found in established fields totaled 6.6 trillion cubic feet, exceeded previously only in 1953 and 1957.

Meanwhile, natural gas production climbed to 13 trillion cubic feet last year compared with the previous peak of 12.4 trillion in 1959, when the proved recoverable reserves were 262.6 trillion.

COMMITTEE ON NATURAL GAS RESERVES

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Texas and Louisiana, which account for more than two-thirds of the nation's proved gas reserves, had a total of 182.9 trillion cubic feet. In 1959, the two states had reserves of 180.4.

Listed separately for the first time is Alaska, where exploration is in the earliest stages. Gas reserves rose sharply in the state from 57.9 billion cubic feet in 1959 to 107.7 billion last year.

During the past decade, discoveries, revisions and extensions have increased the nation's gas reserves by 183 trillion cubic feet. At the same time, total production has soared to 104.8 trillion cubic feet. Despite this increased demand for natural gas, there was an addition of 78.2 trillion to reserves, bringing them to the present 263.7 trillion.

Discoveries of natural gas liquids were the second highest on record. The 121.5 million barrels was exceeded only in 1956 when 128.5 million was found. Reserves of gas liquids total 6.8 billion barrels, an increase of 294 million over 1959.

Canada's natural gas reserves, reported annually by the Canadian Petroleum Association, also broke a record by rising to 30.6 trillion cubic feet. The previous peak was in 1959 when 26.6 trillion was reported. Production totaled 539.5 billion cubic feet, up sharply from 498 billion.

Table 3 is a summary of the Committee's annual estimates of proved natural gas reserves for the past sixteen years, reflecting the changes in the natural gas reserve position in the United States during each of the fifteen years since December 31, 1945. Table 4 shows the proved natural gas liquids reserves of the United States for the last fifteen years, and the changes which have taken place in these reserves annually since the first estimate was made as of December 31, 1946.

In order to arrive at an estimate of the total proved liquid hydrocarbon reserves in the United States, the reserves of natural gas liquids shown in Table 2 have been added to the reserves of crude oil estimated by the Committee on Petroleum Reserves of the American Petroleum Institute. The total liquid hydrocarbon reserves are shown in Table 4 of the report of the Committee on Petroleum Reserves.

The Committee has continued the practice, begun in the report of December 31, 1948, of reporting as a part of the proved reserves, the volume of gas in underground storage reservoirs. Since December 31, 1953, these figures have been based on data furnished by the Committee on Underground Storage of the American Gas Association. Prior to the report of December 31, 1953, the native gas remaining in a storage reservoir when injection began was classified and listed, for the most part, as a non-associated natural gas reserve and was not included in the underground storage figure. Beginning with the December 31, 1953 report, all gas, including native and stored gas, is included in the underground storage figures. Adjustments in, withdrawals from, or additions to storage are included in the figures shown under the heading "Net Change in Underground Storage." Net gas production is the gross production from producing reservoirs less that gas returned to producing reservoirs in cycling and repressuring. Gas withdrawn from storage is not considered as production; likewise no reduction in the "Net Gas Production" has been made for that part of such production which was injected into underground storage reservoirs.

In view of the great diversity of pressure bases specified by different jurisdictions throughout the United States, attention is drawn to the fact that natural gas reserves estimates published in this and previous reports of this committee have been based on standard conditions of 14.65 psia and 60°F.

The committee wishes to point out that it is often not possible to estimate the total reserves of a field in the year of its discovery. Satisfactory estimates can be made only after there has been sufficient drilling in the fields and, in some cases, adequate production history established. For these reasons, the reserves listed as discovered during any current year must be considered only as the reserves indicated by the drilling in that year. The reserves of all fields and pools are reviewed and revised upward or downward in each succeeding annual report to reflect additional information on preceding estimates. These changes are shown as "Extensions and Revisions."

The procedure followed in estimating and assembling the proved reserves figures is the same as that used in the past reports. A proved reserve may be in either the drilled or undrilled portion of a given field. When the undrilled area is considered proved, it is so related to the developed acreage and the known field geology and structure that its productive ability is considered assured. Proved recoverable reserves of natural gas are those reserves estimated to be producible under present operating practices, with no consideration being given to their ultimate use. Since the estimates are made by pools, the recovery factors or abandonment pressures used in the calculations are governed by the operating conditions in each individual pool. Proved recoverable reserves of natural gas liquids are those contained in the recoverable gas reserves subject to being produced as natural gas liquids by separators or extraction plants, now in operation, under construction or planned for the immediate future. For purposes of developing reserve estimates, natural gas liquids are de-

(Continued on page 6)

NATURAL GAS RESERVES

(Thousands of Cubic Feet—14.65 psia, at 60°F)

Total proved reserves as of December 31, 1959		262,596,593,000
Extensions and revisions of previous estimate during the year of 1960	7,332,840,000	
New reserves discovered in 1960	6,637,009,000	
Net changes in underground storage during 1960	282,808,000	
Total proved reserves added and net changes in underground storage during 1960		14,252,657,000
Total proved reserves as of Dec. 31, 1959, and additions during 1960		276,849,250,000
Deduct production during 1960		13,090,450,000
Total proved reserves of natural gas as of Dec. 31, 1960		263,758,800,000

Reserves data are shown by states in Table 1.

NATURAL GAS LIQUIDS RESERVES

(Barrels of 42 U. S. Gallons)

Total proved reserves as of Dec. 31, 1959		6,522,308,000
Extensions and revisions of previous estimate during the year of 1960	603,621,000	
New reserves discovered in 1960	121,509,000	
Total proved reserves added in 1960		725,130,000
Total proved reserves as of Dec. 31, 1959 and new proved reserves added in 1960		7,247,438,000
Deduct production during 1960		431,379,000
Total proved reserves of natural gas liquids as of Dec. 31, 1960		6,816,059,000

Reserves data are shown by states in Table 2.

TABLE 1
ESTIMATED PROVED RECOVERABLE RESERVES OF NATURAL GAS IN THE UNITED STATES

(Millions of cubic feet—14.65 psia, at 60°F.)

	Changes in reserves during 1960					Reserves[b] as of Dec. 31, 1960				
	Reserves as of Dec. 31, 1959[b] (1)	Extensions and Revisions[b] (2)	Discoveries of New Fields and New Pools in Old Fields[b] (3)	Net Change in Underground Storage[c] (4)	Net Production[d] (5)	Total (Columns 7 + 8 + 9 + 10, also Columns 1 + 2 + 3 + 4 less Column 5) (6)	Non-Associated[e] (7)	Associated[f] (8)	Dissolved[g] (9)	Underground Storage[h] (10)
Alaska	57,975	36,993	13,000	0	305	107,663	95,811	0	11,852	0
Arkansas	1,422,817	83,115	36,360	211	82,793	1,459,710	957,514	287,932	209,222	5,042
California[i]	8,593,447	395,351	324,694	30,875	500,472	8,843,895	2,509,684	1,962,792	4,249,526	121,893
Colorado	2,496,159	(—) 474,828	121,520	565	100,662	2,042,754	1,294,053	258,434	489,538	729
Illinois	175,110	8,900	297	7,461	18,633	173,135	9,349	0	111,185	52,601
Indiana	35,088	1,001	284	1,692	3,945	34,120	1,100	1,200	19,875	11,945
Kansas	19,981,403	128,848	156,452	19,866	666,345	19,620,224	18,735,589	527,181	274,886	82,568
Kentucky	1,159,381	46,048	9,020	1,918	72,518	1,143,849	1,041,373	0	76,365	26,111
Louisiana[i]	59,853,920	4,333,983	2,254,600	0	3,056,362	63,386,141	50,527,589	8,956,486	3,902,066	0
Michigan	515,403	7,549	31,200	56,057	24,451	585,758	116,015	71,793	56,634	341,316
Mississippi	2,486,524	31,804	210,390	(—)73	186,307	2,542,338	1,906,135	340,020	290,718	5,465
Montana	665,491	(—)17,245	0	14,126	36,194	626,178	465,058	29,138	76,799	55,183
Nebraska	132,719	(—)3,057	861	0	12,695	117,828	93,277	8,673	15,878	0
New Mexico	17,912,798	(—)1,654,454	127,457	(—)3,317	778,760	15,603,724	11,214,132	2,753,119	1,592,049	44,424
New York	106,519	(—)7,588	420	1,662	4,812	96,201	36,841	0	138	59,222
North Dakota	1,206,542	(—)35,415	0	0	20,106	1,151,021	9,453	340,400	801,168	0
Ohio	748,766	34,297	9,250	12,549	39,309	765,553	326,987	0	89,251	349,315
Oklahoma	16,651,292	975,342	665,460	13,283	993,975	17,311,402	12,275,573	1,943,428	2,973,501	118,900
Pennsylvania	1,051,972	191,836	18,000	50,343	119,671	1,192,480	714,941	0	22,940	454,599
Texas[i]	120,475,783	2,471,209	2,428,403	16,787	5,902,789	119,489,393	78,214,180	27,137,031	14,077,131	61,051
Utah	1,264,250	260,445	63,734	0	62,289	1,526,140	1,007,349	31,476	487,315	0
Virginia	38,632	(—)3,300	300	0	2,342	33,290	33,290	0	0	0
West Virginia	1,593,551	318,967	71,488	37,001	189,882	1,831,125	1,472,197	0	63,633	295,295
Wyoming	3,847,064	199,836	93,719	1,148	207,018	3,934,749	3,197,676	157,435	558,066	21,572
Miscellaneous[a]	123,987	3,203	100	20,654	7,815	140,129	48,172	0	15,184	76,773
TOTAL	262,596,593	7,332,840	6,637,009	282,808	13,090,450	263,758,800	186,303,338	44,806,538	30,464,920	2,184,004

[a] Includes Alabama, Arizona, Florida, Iowa, Maryland and Missouri.
[b] Excludes gas loss due to natural gas liquids recovery.
[c] The net difference between gas stored in and gas withdrawn from underground storage reservoirs, inclusive of adjustments and native gas transferred from other reserves categories.
[d] Net production equals gross withdrawals less gas injected into producing reservoirs. Changes in underground storage and gas loss due to natural gas liquids recovery are excluded. Fourth quarter production estimated in some instances.
[e] Non-associated gas is free gas not in contact with crude oil in the reservoir; and free gas in contact with oil where the production of such gas is not significantly affected by the production of crude oil.
[f] Associated gas is free gas in contact with crude oil in the reservoir where the production of such gas is significantly affected by the production of crude oil.
[g] Dissolved gas is gas in solution with crude oil in the reservoirs.
[h] Gas held in underground reservoirs (including native and net injected gas) for storage purposes.
[i] Includes off-shore reserves.

TABLE 2
ESTIMATED PROVED RECOVERABLE RESERVES OF NATURAL GAS LIQUIDS IN THE UNITED STATES[a]

(Thousands of Barrels of 42 U. S. Gallons)

	Changes in Reserves During 1960				Reserves as of Dec. 31, 1960			
	Reserves as of Dec. 31, 1959 (1)	Extensions and Revisions (2)	Discoveries of New Fields and New Pools in Old Fields (3)	Net Production (4)	Total (Columns 6 + 7 + 8, also Columns 1 + 2 + 3 Less Column 4) (5)	Non-Associated (6)	Associated (7)	Dissolved (8)
Arkansas	32,017	(—)2,640	15	1,895	27,497	4,050	14,243	9,204
California[d]	325,318	16,607	365	28,429	313,861	0	102,288	211,573
Colorado	24,914	2,699	360	3,949	24,024	5,881	5,922	12,221
Illinois	10,754	850	27	1,578	10,053	46	0	10,007
Indiana	124	5	1	20	110	5	6	99
Kansas	196,912	7,680	930	7,119	198,403	179,479	15,796	3,128
Kentucky	49,290	2,000	1,000	3,238	49,052	49,052[c]	0	0
Louisiana[d]	1,357,798	113,002	44,466	82,291	1,432,975	1,173,896	219,740	39,339
Michigan	1,562	118	156	217	1,619	580	359	680
Mississippi	40,944	(—)4,598	2,340	2,505	36,181	22,485	7,591	6,105
Montana	13,511	(—)2,297	1,101	627	11,688	2,482	0	9,206
Nebraska	5,432	1,450	25	752	6,155	3,600	651	1,904
New Mexico	423,040	86,134	3,972	28,347	484,799	324,387	46,137	114,275
North Dakota	97,928	(—)5,066	0	1,644	91,218	0	16,388	74,830
Ohio	1,304	(—)1,304	0	0	0	0[c]	0	0
Oklahoma	367,569	(—)5,374	4,601	28,483	338,313	155,572	51,790	130,951
Pennsylvania	3,677	(—)1,500	0	67	2,110	2,110[c]	0	0
Texas[d]	3,430,375	335,403	58,537	228,141	3,596,174	1,657,955	663,665	1,274,554
Utah	32,376	20,370	0	2,044	50,702	13,131	0	37,571
West Virginia	34,166	10,828	3,610	3,870	44,734	44,734	0	0
Wyoming	73,279	29,252	3	6,159	96,375	47,541	1,940	46,894
Miscellaneous[b]	18	2	0	4	16	0	0	16
TOTAL	6,522,308	603,621	121,509	431,379	6,816,059	3,686,986	1,146,516	1,982,557

[a] Includes condensate, natural gasoline and liquefied petroleum gas.
[b] Includes Alabama and Florida.
[c] Not allocated by types but occurring principally in the column shown.
[d] Includes off-shore reserves.

TABLE 3
SUMMARY OF ANNUAL ESTIMATES OF NATURAL GAS RESERVES FOR PERIOD DEC. 31, 1945, TO DEC. 31, 1960

(Millions of cubic feet—14.65 psia, at 60°F.)

Year	Natural Gas Added During Year			Net Change in Underground Storage	Net Production During Year	Estimated Proved Reserves as of End of Year	Increase Over Previous Year
	Extensions and Revisions	Discoveries of New Fields and New Pools in Old Fields	Total of Discoveries, Revisions and Extensions				
1945	—	—	—	—	—	147,789,367	—
1946	a	a	17,729,152	a	4,942,617	160,575,901	12,786,534
1947	7,570,654	3,410,170	10,980,824	a	5,629,811	165,926,914	5,351,013
1948	9,769,483	4,129,089	13,898,572	51,482	6,007,628	173,869,340	7,942,426
1949	8,061,429	4,612,870	12,674,299	82,746	6,245,041	180,381,344	6,512,004
1950	9,172,381	2,877,351	12,049,732	54,301	6,892,678	185,592,699	5,211,355
1951	13,013,606	3,039,385	16,052,991	132,751	7,966,941	193,811,500	8,218,801
1952	8,934,470	5,411,043	14,345,513	198,850	8,639,638	199,716,225	5,904,725
1953	13,371,355	7,081,661	20,453,016	516,431[b]	9,238,540	211,447,132	11,730,907
1954	4,632,309	4,966,894	9,599,203	90,906	9,426,509	211,710,732	263,600
1955	16,298,125	5,719,069	22,017,194	87,637	10,118,118	223,697,445	11,986,713
1956	19,214,604	5,636,476	24,851,080	133,970	10,907,926	237,774,569	14,077,124
1957	11,118,319	8,998,993	20,117,312	179,733	11,502,359	246,569,255	8,794,686
1958	13,388,808	5,611,098	18,999,906	57,902	11,485,026	254,142,037	7,572,782
1959	14,933,109	5,800,749	20,733,858	161,326	12,440,628	262,596,593	8,454,556
1960	7,332,840	6,637,009	13,969,849	282,808	13,090,450	263,758,800	1,162,207

a Not estimated.
b All native gas in storage reservoirs formerly classified as natural gas reserve is included in this figure.

TABLE 4
SUMMARY OF ANNUAL ESTIMATES OF NATURAL GAS LIQUIDS RESERVES FOR PERIOD DEC. 31, 1946, TO DEC. 31, 1960

(Thousands of barrels of 42 U. S. gallons)

Year	Natural Gas Liquids Added During Year			Net Production During Year	Estimated Proved Reserves as of End of Year	Increase Over Previous Year
	Extensions and Revisions	Discoveries of New Fields and New Pools in Old Fields	Total of Discoveries, Revisions and Extensions			
1946	—	—	—	129,262	3,163,219	—
1947	192,237	59,301	251,538	160,782	3,253,975	90,756
1948	405,874	64,683	470,557	183,749	3,540,783	286,808
1949	294,211	92,565	386,776	198,547	3,729,012	188,229
1950	707,879	58,183	766,062	227,411	4,267,663	538,651
1951	648,497	75,494	723,991	267,052	4,724,602	456,939
1952	475,170	81,668	556,838	284,789	4,996,651	272,049
1953	648,047	95,922	743,969	302,698	5,437,922	441,271
1954	20,830	86,520	107,350	300,815	5,244,457	(—)193,465
1955	447,160	67,348	514,508	320,400	5,438,565	194,108
1956	715,764	94,056	809,820	346,053	5,902,332	463,767
1957	8,884	128,508	137,392	352,364	5,687,360	(—)214,972
1958	749,956	108,250	858,206	341,548	6,204,018	516,658
1959	593,905	109,539	703,444	385,154	6,522,308	318,290
1960	603,621	121,509	725,130	431,379	6,816,059	293,751

fined as those hydrocarbon liquids which, in the reservoir, are either gaseous or in solution with crude oil and which are recoverable as liquids by the processes of condensation or absorption which take place in field separators, scrubbers, gasoline plants, or cycling plants. Natural gasoline, condensate, and liquefied petroleum gases fall in this category. While the liquids so collected and the products derived from them in some of the modern plants are known by a variety of names, they have been grouped together here under the general heading "Natural Gas Liquids."

The estimates presented in this report incorporate the results of carefully detailed studies of many hundreds of fields and pools throughout the United States. Their preparation has required the help and active cooperation of specially trained geologists and engineers familiar with developments in all producing areas throughout the country. The committee is fortunate to have obtained the help of the group of men who have served as subcommittee members. As in past years, they have given generously of their time and efforts to make these estimates as complete and accurate as possible. The committee expresses its appreciation to these men.

The committee also acknowledges the helpful cooperation of the Committee on Petroleum Reserves of the American Petroleum Institute, on whose estimates of crude oil reserves the estimates of dissolved gas reserves are based, and the Committee on Underground Storage of the American Gas Association, who supplied the data on which the underground storage figures are based.

Lester T. Potter,
president, A. G. A.

Marvin Chandler,
Northern Illinois Gas Co.

David W. Hoppock,
Bryant Manufacturing Co.

W. G. Wepfer,
Arkla Air Conditioning Corp.

Seminars set new cooling goals

Crowds of gas executives heard air conditioning plans from industry leaders

Gas air conditioning is on the march. Over 260 executives from some 75 gas companies throughout most of the United States gathered in four cities recently to lay plans for the most aggressive air conditioning sales effort in gas industry history.

Air conditioning sales seminars, sponsored by A. G. A., were held in each of four geographic regions: in Birmingham, for the Southeastern states; Chicago, for the Midwest; Dallas, for the Southwest; and Boston, for the Northeastern region.

These gas air conditioning "meetings-at-the-summit" were held to achieve three principal aims:

To explain the industry-wide sales goal of 25,000 units for 1961.

To discuss many of the market opportunities, organizational procedures, sales policies and techniques to help accomplish this goal, and

To hear the manufacturers' product development and marketing plans for the coming months.

Presiding officers at all four meetings strongly emphasized the need for building summer gas load through the sale of air conditioning to increase net earnings and protect the gas industry's heating load against the inroads of electric heating.

In Birmingham, Richard A. Puryear, president of Alabama Gas Corp., said: "Gas air conditioning is the best investment a gas company can make in its future growth."

Marvin Chandler, president of Northern Illinois Gas Co., told an overflow audience of over 90 executives in Chi-

(Continued on page 29)

Mid-West, Eastern sales conferences set for May, June

Strategies for selling gas will be spelled out at two conferences for salesmen and executives scheduled for May and June.

The 34th annual Mid-West Regional Gas Sales Conference will be held May 15 and 16, at the Edgewater Beach Hotel in Chicago.

The Eastern Gas Sales Conference will be held June 5 and 6, at the Pittsburgh Hilton Hotel, Pittsburgh, Pa.

Both conferences are sponsored by the Residential Gas Sales Section of A. G. A.

Theme of the Mid-West Conference will be "Make Tomorrow's Sales Today."

Freshness of subject matter was a prime criterion for selection of topics under this theme, in order to have as little repetition of past programs as possible.

Under chairmanship of Walter H. Kurdelski, Michigan Consolidated Gas Co., the program will feature such speakers as Robert F. Calrow, Jerome P. Happ, William L. Hayes, Julius Klein, C. S. Stackpole, and S. F. Wikstrom.

Lester T. Potter, president of A. G. A., will deliver the keynote address. Other noted speakers will be Rev. Elmer Hjortland, of Oak Park, Ill., well-known for his inspirational talks; Willie Mae Rogers, director, Good Housekeeping Institute; Richard E. Snyder, an outstanding marketing economist; and Ed Soby, merchandising manager, Home Products Group, Rheem Manufacturing Co.

Mr. Stackpole will unravel a current tangled web in a talk entitled "Gas Refrigeration—Diagnosis and Prognosis."

The Eastern Sales Conference, focusing on the future, will stress four main objectives:

1. To stimulate action in the area of new and existing homes, for all uses of gas.

2. To measure the challenge of competition.

3. To assess the competitive position of gas.

4. To stimulate group discussion during "ideas for action" sessions.

Under chairmanship of J. Richard Kelso, Hope Natural Gas Co., speakers will include Edwin T. Strong, Robert L. Ingeman, C. S. Stackpole, and L. T. Potter from the gas industry. Frank R. Barnitz, Brooklyn Union Gas Co., will act as chairman of the second day's sessions.

Fresh viewpoints will be brought to the conference by other outstanding speakers from outside the gas industry.

Arthur J. Goldman, director of marketing, *House & Home* magazine, will talk on "Beat 'Em in New Homes." Topic of H. Robert Charles, family home editor, *Parents'* magazine, will be "Beat 'Em in Existing Homes."

An inspirational talk will be given by James L. Hayes, dean, School of Business Administration, Duquesne University.

Meet your Association staff

Arthur Q. Smith

Arthur Q. Smith, A. G. A.'s link between the Public Information Bureau and the Industrial & Commercial Gas Section, might almost be dubbed a "character." Certainly, he has had an interesting life.

During his tenure at A. G. A., Art has been disseminating information and publicity on industrial and commercial gas utilization to practically every trade magazine in these fields for the benefit of industrial gas engineers and commercial gas representatives throughout the country. To gather material for these articles, he has traveled through every state of continental United States except North and South Dakota. Through these travels and attendance at national meetings of the gas industry, Art has made a thousand and one friends and his wife Kay can boast of hundreds of "gas cousins."

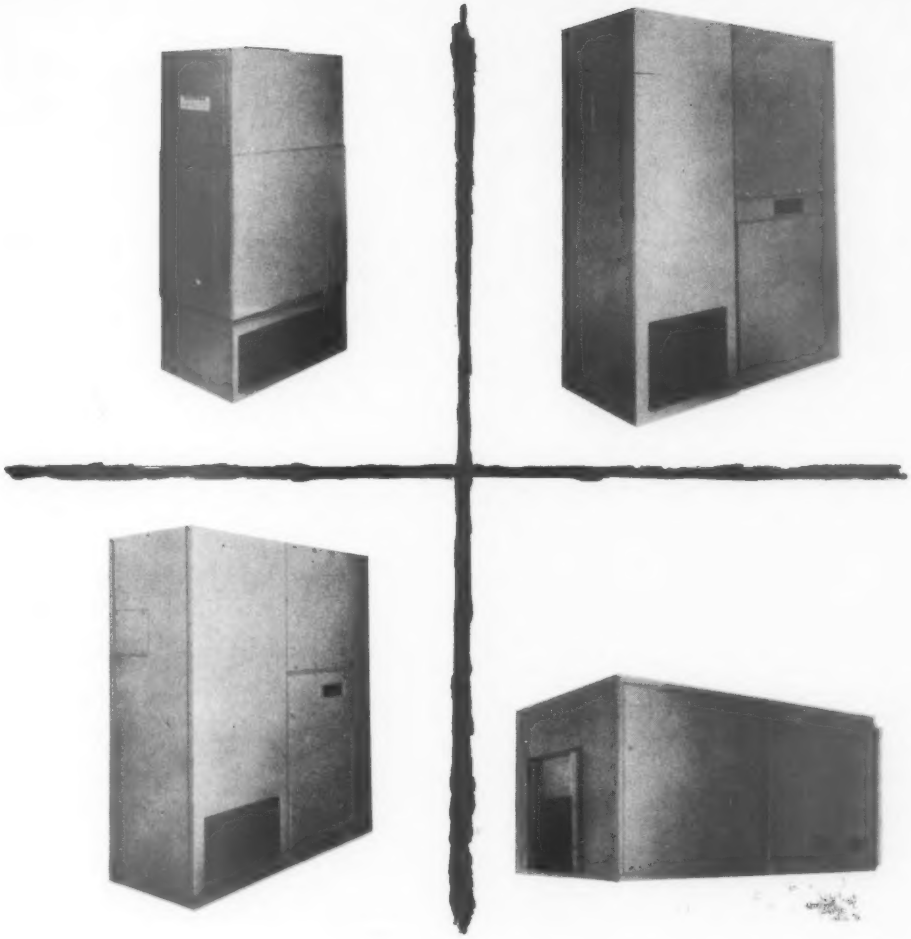
Art is one of the "elder" staff and is looking forward to retirement next year. He is a rare individual around A. G. A., being a native Manhattanite, as were his family before him since the place was bought from the Indians.

Educated in the city schools, P. S. 165 and DeWitt Clinton High School, Art continued his studies at Columbia University, majoring in electrical engineering. Like many of us, he had to have a job to finance his education. He is a little vague just how he got one of his jobs, but thinks it developed from his Sunday School class of which the late Frank Morgan was a member. At any rate, he landed in the Pathe Studios in Jersey City, where he had the enviable assignment of grinding second camera on the "Perils of Pauline" starring Pearl White.

He also worked as an engineering "mutt" in the Western Electric Transmission Laboratories (now the Bell System Labs.) and had a direct hand in developing a sensitive telephone transmitter and a loud speaker by which the engineers shouted across the Hudson River to Stevens Tech.

Because of his photographic experience at Pathe, he enlisted in the Signal Corps' photo section in World War I, and was sent to France after

(Continued on page 29)



New units widen cooling market

An expanded range of unit capacities and a major absorption design "breakthrough" are expected nearly to quadruple the gas industry's air conditioning "market eligibility" during the next year, say officials of Arkla Air Conditioning Corporation.

W. G. Wepfer, Arkla's general sales manager, told a press conference at the 15th International Heating and Air-Conditioning Exposition and ASHRAE meeting in Chicago that, while gas possessed unit capacities and designs to compete in only about 20 per cent of the total central-system market in 1960, it anticipates being able to compete for about 80 per cent of the market by a year or so from now.

Arkla showed engineering models of the first three of at least nine new gas-fired small-tonnage units planned for introduction during the next year at International Amphitheatre here—the Model 650 4.3-ton, the Model 750C 5-ton "remote," and the Model 850 6.4-ton. All are "All-Year" cooling and heating units. The Model 650 will be in production soon; the 750C and 850 are expected to be available by fall.

The company also exhibited its Model 500C 3½-ton All-Year remote (for outdoor installation); the Arkla Model DF-3000 direct-fired absorption water chiller-heater; a new vertically-installed 3½-ton capacity fan-coil-filter assembly, the Model FCF 42-96V, to be available in upflow and downflow versions, as well as a horizontal model; and Arkla-Humphrey multi-directional gas unit heaters.

An Arkla 1¾-ton fan-coil-filter unit, the FCF 21-48, which will make possible zoning of residential and small commercial applications, also will be available soon.

The company furthermore plans manufacture of a Model 650C 4.3-ton remote, a Model 655C 4.3-ton remote add-on cooling unit, and a Model D750 (downflow) five-ton. The Model D500, a downflow 3½-ton, just recently went into production at the concern's Evansville, Ind., plant. Development of gas equipment in the 2-ton range also is under way at Arkla, with introduction tentatively expected next year, Mr. Wepfer said.

(Continued on page 26)

● *Charm of old Charleston, S. C., provides a pleasing contrast to serious top-level*

Executives Face Up *to* Gas Industry Dilemmas

Some of the most serious problems facing gas industry management were aired last month, before a record attendance at the General Management Section's annual Conference in Charleston, South Carolina.

General sessions and committee meetings held in the Francis Marion hotel were filled to overflowing by a total of 330 executives from all parts of the country. More than 140 ladies meanwhile enjoyed the hospitality of the historic old city.

Challenges at which the delegates took a long and sober look included:

- The need for measures to alleviate the plight of workers displaced by automation.
- The need to break through the "6 per cent profit barrier" if the gas industry is to expand sufficiently to meet the needs of the future.
- The need to develop new markets and new products unknown today if the industry is to remain prosperous.
- The problem of developing underground storage for vast quantities of gas to balance load fluctuations and to utilize pipeline capacity efficiently.
- The looming probability of greater and greater government intervention in the economy and in the gas industry.
- The threat of legislative action, being sought by the coal industry, to restrict sales of gas arbitrarily in favor of other fuels.
- The need for informed management action to prevent accidents, costs of which run into millions of dollars yearly.
- The necessity for research planning years ahead in order to meet the pressure of competition.
- The need for enlightened accounting practices in order to conserve funds for growth and avoid the eventual threat of public ownership.

Opening the conference Monday, March 20, Chairman Gordon C. Griswold introduced the mayor of Charleston, J. Palmer Gaillard, Jr., who welcomed the delegates.

Robben W. Fleming, professor, College of Law, University of Illinois, kicked off the talks with "Labor Relations in an Automated Age."

Attacked by Professor Fleming was the problem of workers displaced by automation. Automation he defined broadly as all kinds of changes including organizational rationalizations.

As one approach to a solution, Professor Fleming cited his own experience as executive director of the Armour Fund, under which a $500,000 "kitty" was established by the Armour meat packing firm to assist displaced workers in relocating.

Displacement because of automation occurs in many industries, Professor Fleming pointed out. Sometimes the work-force reduction is accomplished simply through normal attrition. However, this solution does not provide the over-all growth in jobs needed to accommodate a growing labor force.

op-level topics tackled at General Management Conference, March 20-22

Professor Robben W. Fleming spoke on "Labor Relations in an Automated Age"

Carl A. Ulffers told of "The Need for Profit in a Regulated Industry"

Gordon C. Griswold, chairman of Section, presided over the conference

Pockets of permanent unemployment often are created when a plant closes down for a time, since a large percentage of the former employees often are not rehired.

Private action is important in coping with such situations, but is limited because of its dependence for effectiveness on a state of prosperity in the economy as a whole.

Public employment agencies should, but do not as yet, play a vigorous role in relocating displaced workers. An effective agency working in a national framework is a vital necessity.

New devices appear to be needed, Professor Fleming said. Among these is some sort of "mobility fund" to help defray costs of moving people to areas where jobs exist. This could take the form of a loan fund, and would probably have to be a form of public assistance.

Underwriting the cost of moving people, Professor Fleming said, probably would be more economical than attempting to support them indefinitely on unemployment compensation or relief.

Other changes in unemployment compensation laws are badly needed, he said.

Among these are provisions and funds for retraining of workers displaced by automation, for new jobs requiring different skills. New York state already has redrawn its laws to permit workers to train for new jobs while drawing compensation payments. Safeguards must be observed, however, including checks on whether jobs are available in the new field, on competence of the training agency, and on the workers' own aptitudes.

Extension of benefits for longer periods also is needed, Professor Fleming stated, because in most cases up to a year is needed for completion of a retraining course.

Unless industry provides full employment (97-98 per cent), Professor Fleming warned, there will be great public pressure for a shortened work week to spread available jobs. This will inevitably result in higher business costs.

High unemployment also will create pressure for larger and earlier Social Security benefits, in order to clear the labor market of older employees.

What the individual company can do to meet the displacement problem:

1. Planning in the pre-crisis stage. The situation must be analyzed in advance, and advance contacts made for relocation of workers.

2. Advance notice to employees, as much as is possible without impairing company operations.

3. Company retraining programs, including continuing education programs as part of normal operation, even for skills outside those called for in existing jobs.

4. Transfers between plants. These frequently involve problems, especially when done on a large scale, but remain perhaps the best solution to displacement.

(Continued on page 30)

● *Far East, Far West, Far North and "Down Together"*

Hemispheres meet at Honolulu conference

Customers come by the millions in the Land of the Rising Sun.

• Electrical power with government blessing is the headache for gas people Down Under.

• In Alaska one way to advertise gas is with a booth at a dog-sled racing festival.

• In the continental United States, homemakers need an advertising shove to put gas appliances on their glamor-item want lists.

• And in Hawaii, it's Isle (bottled) Gas that has helped open up undeveloped areas.

Such is a skim-the-surface summary of talks given at the second Mid-Pacific Gas Merchandising Conference held in Honolulu during February. Gathered for two days of sessions and a bit of squeezed-in sight-seeing were delegates ranging from company executives who had traveled 4,420 miles (from Sydney, Australia) to the dealer who left his store five blocks away.

A last-minute change of plans put the conference in the Princess Kaiulani Hotel. It was an appropriate spot for a conference which bordered on the international. The hotel, smartly streamlined, is named after the youthful Princess Kaiulani who in the 1880's was a favorite of one of Hawaii's first good-will ambassadors, Robert Louis Stevenson. Luncheon on the first day of the conference was held in the hotel's Robert Louis Stevenson room.

At the luncheon meeting, A. G. A. Managing Director C. S. Stackpole gave his second talk for the day. Earlier he had given the keynote speech of the conference, following welcome addresses given by Hawaii's Governor William F. Quinn and Honolulu Gas Company president James C. Stopford. A. G. A. president Lester Potter, originally scheduled as luncheon speaker, had been forced to cancel because of a death in his family.

Mr. Stackpole projected the gas industry into a near-miracle future.

"Someday—not soon . . . but someday—thermo-electricity could provide the power for all homes and industries."

He described experimental research using jet aircraft engines converted to natural gas as power source and told of a

Hawaii's Governor William F. Quinn, right, presents a gas-fired luau torch to C. S. Stackpole. Center, host James C. Stopford

Houston, Texas school which receives all its heat, lighting and air conditioning by means of a gas turbine engine which uses natural gas to produce power.

A total of 25 different institutions are engaged in gas range research and two companies are making flameless burners, he said, and with 12 to 14 manufacturers making gas air conditioning equipment that show is "on the road." In the middlewest, some industrial meters are being read by remote telephone control, he reported.

Mr. Stackpole was not the only speaker who looked into a clear and business-like crystal ball and, for the most part, liked what he saw.

Sears, Roebuck and Company merchandising executive Arthur B. Allen viewed the coming business outlook and pointed out that "the facts seem to dispel the gloom." With highest spending in 1960 on personal services such as travel, Mr. Allen predicted that spending would return increasingly to durables as replacement needs occurred. From Mr. Allen came the reminder that "we keep in mind the plus personal savings of last year that may be poured into the retail stream in 1961."

To get a fair share of this "retail stream," Mr. Allen warned that good selling methods must be used. Good selling must be based on constructive attitudes, thorough knowledge of merchandise and knowledge of people.

Probably the outstanding example of this constructive attitude was presented to the conference by Dale Teel, general manager of the new Anchorage Natural Gas Corporation. With Alaska's new gas company nearly ready to supply natural gas at 8,000 Btu's a cent as opposed to electricity at 1,000 Btu's a cent, company officials are resisting any temptation to "tell the gas story" as one of mere cheapness. Newspaper and TV campaigns will be based on positive selling, Mr. Teel said.

"We will not run down competitors but tell the benefits of our product . . . we are going to sell benefits." Already the benefits have been pointed out at an open house showing new gas equipment. The pioneering company will have a

(Continued on page 33)

Among conference leaders were GAMA's Wendell Davis and Harold Massey, and Michael J. O'Hara, Gas Appliance Society of Hawaii

Harper-Wyman's Howard J. Goss and Phil Harper staged cooking contest

Host company greeter Betty Horikawa found herself greeted—by cameras

East-West idea trade is brisk as Anchorage Gas Company's Dale Teel listens to Suetoshi Iida of Tokyo Gas Company

I'M ASKING

500 EL PASO HOMEMAKERS

WHAT THEY THINK ABOUT SOUTHERN UNION!

In the next few days, a group of Southern Union Gas Company officials and myself are going to make personal calls on 500 El Paso homes. I wish we could call on every homemaker in our city, but, of course, this would be impossible.

What we want is your honest opinion about Southern Union. Are we giving you the kind of service you want from your gas company? Do you have any suggestions as to how we might improve our service?

We're going to hear some good ideas — I'm certain of that. Some will be suggestions that we can put to use. Others, we may not be able to follow. But we want to hear them, anyway.

If your home is visited, I hope you will speak up. In fact, if you especially want the opportunity to talk with one of our officials, then please call my office (KEystone 3-8411). We'll make a special trip to see you.

I think giving you a chance to help us originate improvements in our service is a good idea for us and for you. Later on we will report to you the results of our calls.

District Manager

One gas makes living at your fingertips

SOUTHERN UNION GAS COMPANY

Alex Louis, Dallas marketing consultant, briefs Southern Union personnel on survey

Heads of departments J. O. Carnes, L. L. Moore, map out their routes

Unique public relations project uncovered problems, opinions, while winning friends for company

Top executives leave desks to ring doorbells

Sixteen top executives of Southern Union Gas Company conducted interviews with 481 housewives in El Paso, Texas early in December 1960 in what is believed to be the first public opinion survey ever conducted by a gas company using top management as interviewers.

Purpose of the survey was three-fold:

1) To help strengthen the company's public relations in El Paso by demonstrating to customers that management is concerned about their opinions.

2) To obtain information about attitudes and preferences of customers that might be useful in future planning of operations, marketing and public relations efforts.

District Manager E. C. Reddy, V-P Thomas W. Corr interview an El Paso housewife

HERE'S WHAT

500 EL PASO HOMEMAKERS

THINK OF SOUTHERN UNION GAS COMPANY

More than 9 out of 10 have a favorable opinion of Southern Union.

Among customers who have requested service, 96 per cent were satisfied with the promptness, efficiency and courtesy of our employees.

We called on 500 homes in all parts of the city for this information. Fifteen Southern Union officials and I visited these homemakers. It was a most gratifying experience for all of us.

Of course, getting your honest opinion of our service was just part of our aim. We were also after ideas on how to serve you better. One hundred and thirty-four of you made specific suggestions — many of which should help us to improve our service. We're thoroughly analyzing these ideas, and I can promise that a number of them will be in operation soon.

A couple of questions we asked became significant simply because so many of you were unable to answer them. Let me repeat both questions here: Do you know whether the prices Southern Union charges for gas is or is not regulated by the city? Is Southern Union Gas Company owned by the city or state governments, or is it owned by stockholders?

The correct answer to the first question is YES. The City Council of El Paso regulates gas rates here. As for the second question, Southern Union is owned by 16,500 stockholders, including nearly 600 in El Paso.

I stress these points because we at Southern Union are proud that we are a free-enterprise, investor-owned company. And while rate regulation may permit Southern Union stockholders to earn a reasonable profit on their investment, it doesn't guarantee a profit. Any profit made must be earned through efficient business operation.

I greatly appreciate the fine cooperation extended by the 500 El Paso homemakers that our Company officials interviewed two weeks ago. I am confident that this will help us render more effective gas service to all our customers.

[signature]

District Manager

Our gals makers living at your fingertips

SOUTHERN UNION GAS COMPANY

Mary Olivares, of El Paso office, District Manager C. A. Stockhoff, on the sidewalk trail

3) To expose key employees to direct contact with a cross section of El Paso customers so that they might gain first-hand insight into problems and opportunities faced by the company.

What brought about this unique management-conducted survey?

President James C. Reid, upon assuming office in April 1960, brought with him a "new look" which included major organizational changes to improve operating efficiencies and an all-out effort to strengthen the company's public relations. Mr. Reid had studied the joint A. G. A.-INGAA national public opinion survey, conducted in 1959, which had pointed out areas of weakness in the gas industry's public acceptance. He also had learned how Kroger Food Stores had strengthened its competitive position after using top management to survey customers in several sections of the country.

Out of this background grew the idea of conducting a special survey using key personnel to ascertain the opinions held by a cross-section of Southern Union customers.

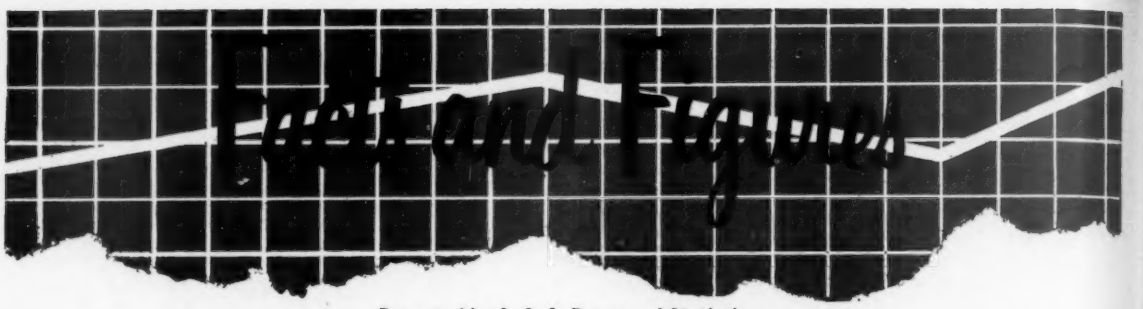
Immediately the company faced a problem, since it serves some 71 communities, with a total of 350,000 gas customers, in Texas, New Mexico, Arizona and Colorado. El Paso—a city of 275,000 population—finally was selected for the survey because management wanted a large enough town so that adequate sampling could be obtained. El Paso's normally favorable weather was another factor in its choice.

A special committee laid out plans for the survey prior to the final approval of Mr. Reid. Included in this group were Vice President and Operating Manager N. P. Chesnutt, Vice Presidents E. M. Kelley, Sr. and Thomas W. Corr, and Executive Assistant David J. Kerr.

Alex Louis, a research consultant in Dallas, was engaged to help draft the questionnaire, establish the survey pattern, train the interviewers and tabulate the results.

Sixteen Southern Union officials par-

(Continued on page 24)



Prepared by A. G. A. Bureau of Statistics

Utility gas sales to ultimate consumers for January, 1961, set an all-time record for sales in any one month with a total of 10,968 million therms, an increase of 10.2 per cent over the preceding January. The gain can be attributed largely to the increased heating demand created by the exceedingly cold weather experienced in most parts of the country in January; because of the prevalence of cycle billing, the current figures also reflect to some extent the cold weather of the latter part of last December. Sales to residential, commercial, and other consumers were up 12.3 per cent to a total of 7,414 million therms. Industrial gas sales of 3,555 million therms in January, 1961, showed an increase of 6.1 per cent over the same month last year, despite a decline of 7.7 per cent in national industrial activity, as measured by the Federal Reserve Board index.

Work was started on only 70,500 nonfarm housing units this January. This figure represents 16.4 per cent fewer units than were started in the same month last year. Severe weather conditions accounted for some portion of the drop, especially in the northeast; but in general it would seem that the loss is a continuation of the decline in residential construction activity experienced last year, when non-farm housing starts were 18 per cent below those of a year earlier. Private spending for all types of new construction in January, 1961, was 4 per cent below the level for January, 1960, and 12 per cent less than for December, 1960. (The normal seasonal decline between December and January is about 12 per cent.)

The Gas Appliance Manufacturers Association has reported that shipments of gas-fired central heating equipment in January totalled 74,787 units, an increase of 1.6 per cent over last year's total. Water heater shipments also showed an increase of 5.3 per cent to a total of 227,000 shipped in January, 1961.

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING JANUARY, 1961

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	January		December		12 Months, 1960	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES (including built-ins)						
Gas	115,200	—13.7	117,900	—23.0	1,816,100	— 9.8
Electric	109,400	— 4.9	113,500	—22.0	1,512,500	—10.4
WATER HEATERS						
Gas	227,000	+ 5.3	185,500	— 3.9	2,666,200	— 9.7
Electric	52,500	+ 7.8	47,300	+ 7.7	668,500	—14.7
GAS HEATING—Total	74,787	+ 1.6	68,314	—15.0	1,173,182	—13.6
Furnaces	59,600	— 0.2	55,400	—15.0	900,000	—14.6
Boilers	8,787	+28.8	7,014	— 5.0	141,682	— 4.1
Conversion burners	6,400	— 9.9	5,900	—24.4	131,500	—13.9
OIL-FIRED BURNER INSTALLATIONS	41,309	—10.4	36,525	—26.3	516,863	—19.0
DRYERS						
Gas	36,968	— 1.2	38,616	—20.0	430,827	— 9.6
Electric	66,190	—10.8	80,090	— 7.0	807,140	—10.8

Sources: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, "Fueloil and Oil Heat," and American Home Laundry Manufacturer's Association.

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING JANUARY, 1961

(MILLIONS OF THERMS)

	Month of January			Twelve Months Ending January 31		
	1961	1960	Per Cent Change	1961	1960	Per Cent Change
Natural gas	10,606.7	9,642.4	+10.0	89,629.6	85,340.5	+ 5.0
Manufactured and mixed gas	361.7	311.6	+16.1	2,409.3	2,300.6	+ 4.7
Total gas	10,968.4	9,954.0	+10.2	92,038.9	87,641.1	+ 5.0
Residential, commercial, and other	7,413.7	6,602.8	+12.3	46,838.6	42,131.3	+11.2
Industrial	3,554.7	3,351.2	+ 6.1	45,200.3	45,509.8	— 0.7
A. G. A. Indices (1947-1949 = 100)						
Total gas sales	313.7	284.7	+10.2			
Residential, commercial, and other	345.3	307.5	+12.3			
Industrial	263.4	248.3	+ 6.1			
Daily Cumulative Degree Days						
Month of January	967	849	+13.9			
Season to date (total—July through January)	2,704	2,489	+ 8.6			

PERTINENT BUSINESS INDICATORS, JANUARY

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	January			December		
	1961	1960	Per Cent Change	1960	1959	Per Cent Change
Industrial activity, FRB (1947-49 = 100)	155	168	— 7.7	159	165	— 3.7
Consumer prices (1947-49 = 100)	127.4	125.4	+ 1.6	127.5	125.5	+ 1.6
Housing starts, non-farm (thousands)	70.5	84.3	—16.4	71.9	93.6	—23.2
New private construction expenditures ($ million)	2,751	2,870	— 4.1	3,130	3,108	+ 1.0

Gas commercials directed to young people are used on show. Above, a gas incinerator bit

Above, WKBN cameras zoom in on panel
Below, "Burner-with-brain" pops corn

Youngstown youngsters 'go' with gas

The East Ohio Gas Co. is making it possible for a group of Youngstown, Ohio, teenagers to learn the ropes of the television broadcasting world.

Because East Ohio decided to sponsor a Junior Achievement company program, Tele-Teens Productions, Inc., is in business.

A 30-minute show, called "Generation 60's," is based on a panel show format. Scheduled every third week on Sunday afternoons, it began on December 18 and will continue through April.

Besides sponsoring the show, East Ohio, through its advertising department, helps club members present the commercials. After the commercials are written, East Ohio chooses and coaches the teenage announcers.

The Junior Achievers, aged 15 to 19, originated the format of the show with the help of the WKBN staff. The staff also taught them how to work the cameras.

The teenagers do everything but direct the show. For each performance, four serve as members of the panel while others are cameramen, mike men and floor managers. Guest moderators are used on each show.

Why is East Ohio sponsoring this program? As company representatives explained it to the Junior Achievement club, it is strictly a business deal.

"We want to sponsor shows which will attract viewers," East Ohio said. "We think 'Generation 60's' is a good program and a good vehicle to reach an audience of young people and their parents."

(Continued on page 34)

Industrial relations round table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons
Assistant Personnel Manager
Philadelphia Electric Co.

● **Are you a prisoner?**—Recently William Fagerstrom, the training supervisor at Wisconsin Power and Light Company, brought into clearer focus the problem of those employees who are content with the status quo. We have heard that there are more prisoners outside prison walls than inside. They are prisoners of themselves. Mr. Fagerstrom stated that some reasons for a feeling of imprisonment are fear of the unknown, fear of striking out on a different course, complacency, and an unwillingness to do mature thinking and to work with sincere enthusiasm.

People often seem to feel comfortable in their self-made confinements. Yet, they at times become frustrated when they see others bypass them on the ladder of success. To make matters worse, the same persons when bypassed tend to build higher walls and to increase their tensions and frustrations.

An executive of a highly respected organization recently commented, "The next 10 years could hit hard at the person who stands easy on past achievements, who regards progress as an unwarranted intrusion on his private, complacency-lined rut."

Mr. Fagerstrom reminded us that always many promotions are under review. Within the next ten years in one large utility, 62 per cent of the present executives, district and station managers, and heads of general office departments will reach retirement. Many supervisory positions, such as those of local manager, operating superintendent, and foremen, will be vacant because of retirements. It has been said that for each retirement, three and a half promotions on the average result. This will be a period offering opportunities and challenges.

Each of us should determine what we really want in the future. As an individual, you should be realistic. Know your capabilities. Should you aspire to advance; or in the long run will you realize greater satisfaction and happiness in your present position?

Whatever you decide, whether it be to go further or to seek more satisfaction from your present work, one thing is essential—a need to develop the real emotional maturity to release you from your prison walls. Emotional maturity has no relationship to age. Mature thinking means objective thinking and is based on the following traits:

Self-acceptance. Be able to understand yourself. Be certain to distinguish between self-acceptance and self-satisfaction. If you are doing the kind of work you enjoy and for which you are best qualified, then face facts and do not try to get jobs for which you are not qualified.

Sound human relations. A mature individual recognizes another person as an individual. He respects that person's rights and judgments. He is willing to give, as well as to take.

Desire to solve problems. In his self-examination the mature person has determined his capabilities and will not beat his head against a stone wall. From the things he can do, he derives a real sense of accomplishment.

Willingness to accept responsibility. Acceptance of responsibility is a matter of progress.

Adequate self-discipline. Until the individual learns to discipline himself, he is not capable of disciplining others. Self-control must keep pace with growth.

Freedom from prejudices. The mature individual's decisions are free from personal prejudices and feelings.

Creative ability. The mature person can conceive ideas and new ways of doing things.

Sense of humor. This is the ability to see a complete range of emotion. Humor is not just laughter. Humor does not require external stimuli.

Sense of urgency. This is the attitude of not being able to wait to get something done so that something else can be started. The sense of urgency includes a sense of placing first things first.

Ability to produce. A growing plant is not mature just because it is big. Similarly, the mature person has the ability to produce things from a creative mind.

In short, the mature mind refuses to be imprisoned. It does not conform to nonconformity. Therefore, let us break the bonds of our self-made prisons.

● **NLRB rulings**—NLRB clarifies "technician" approach in election order—In directing a production and maintenance bargaining unit election at General Electric Company's Pinellas Peninsula plant, Tampa, Fla., the National Labor Relations Board's selection of alleged technicians to be included in the unit and its exclusion of others provides some clarification of the standards for "technicians" set up in the case of Litton Industries.

In this instance, exclusion of alleged technicians from the production and maintenance unit was based on (1) technical training, qualifying experience in the electronic field, exercise of independent judgment, and (2) ability to handle specialized technical devices and understanding of the intended functions of the equipment, so that the workers can suggest equipment redesign if it does not operate properly.

On the other hand, the board includes in the unit certain employees, who are called technicians because they are not required to have any special educational training or to exercise independent judgment or discretion on the job.

The board's distinction between the two groups of technicians results in rejection, in part, of General Electric's assertion, joined in by the International Brotherhood of Electrical Workers as the petitioner for the election, that all technicians listed in the case should be excluded from the unit. The incumbent union, International Union of Electrical Workers, argued for inclusion of the technicians.

In its selective process, the board included in the production and maintenance bargaining units: (1) chemical engineering technicians, who perform routing encapsulation of a variety of experimental subassemblies under direction of an engineer or higher graded technician, and are required to have only a high school diploma, with three to six months' experience in the encapsulation area, (2) electronic material technicians, who need not have technical or special educational training beyond high school (and, although they are required to have four years' applicable experience in keeping tabs on materials and supplies in connection with distribution and cost, this is not technical experience within meaning of the Litton standards), and (3) electronic engineering technicians, who are not required to use any independent judgment or discretion in their routine repair, calibration, and verification of electronic test equipment, even though they are skilled employees who must have one year of technical school training and two years' experience to qualify for their classification.

Excluded from the unit are such employees as (1) electronic computing system technicians, who must be graduates of a two-year technical institute and have additional qualifying experience for their work requiring exercise of independent judgment in various plant laboratories under the direction of professional employees, (2) electronic engineering technicians, who do work involving some independent scientific analyses and who must instruct and guide lower rated technicians, (3) appraisal technicians, who plan specialized electronic system tests for quality appraisal; investigate deviations from normal operations to determine whether test equipment or product is at fault; plan specialized circuits, accessories, and cables; and evaluate and keep test data, and (4) electronic computing system technicians, who work on a large computing device described as extremely complex in nature and who have effected redesigns of the equipment to correct faults that have made the device inoperative a number of times.

Infra-red warms 'all outdoors'

Overhead gas infra-red heaters made an island of warmth on a Long Island, N. Y. railway platform during an unusually severe winter, helped thaw hearts of long-suffering commuters

The Peoples Natural Gas Co., Pittsburgh, Pa., has reported installation of a gas infrared heater at Indiana, Pennsylvania Savings and Trust Company as part of park-and-bank service

Schwank overhead burners at entrance to Skirvin Tower hotel in Oklahoma City created a warm, dry island amid slush, snow and icy winds of a mid-winter day for residents and passers-by

At Thistledown race track near Cleveland, Ohio, fans watch from open stands warmed by gas-fired infrared heaters (shown suspended from grandstand ceiling). The 298 units, fueled by The East Ohio Gas Company, of Cleveland, heat concession stands, a restaurant, and a betting window area

A blanket of snow covered the ground on the day the Oklahoma City Chamber of Commerce members entertained newsmen from throughout the entire state at a luncheon during their annual mid-winter convention—and all witnessed the efficiency of the new Schwank infra-red gas radiant heaters installed at the entrance of the Skirvin Tower hotel.

While the two 48,000 Btu Schwank marquee heaters had been installed two weeks previously, this was their first real opportunity to demonstrate what they could do, according to state distributor C. W. Raney of Oklahoma Infra-Red, Inc.

Working with an industrial engineer from the Oklahoma Natural Gas Company, Raney had selected the Skirvin Tower as the best location in Oklahoma City as a setting for displaying the merits of comfortable, efficient outside heating with the new gas infra-red burners.

They sold the idea to Dan James, president and general manager of the Skirvin Tower, and proceeded to install two of the Model JM-524 units under the marquee at the hotel entrance.

During the short time they have been in operation, Mr. James declares they have not only lived up to every claim made for them, but have caused many favorable comments by both Tower residents and employees.

Having "broken the ice" with the Schwank burner in the downtown Oklahoma City area, Mr. Raney reports that similar units have been purchased and are being installed at the First National Bank drive-in bank and parking building, at the Liberty National Bank drive-in and several other business houses.

Gas near bottom of list as fire cause in U.S.

Only 3½ per cent of all building fires in the United States during 1959 were attributed to gas and gas appliances, an A. G. A. summary of annual estimates of the National Fire Protection Association (NFPA) reports. Fires totaled 883,300 with gas as the listed cause of only 31,600.

NFPA, a non-profit voluntary membership fire safety organization, compiles its annual estimates of the nation's fire causes and losses from reports of Federal, state and local fire authorities.

Last year's losses in building fires were estimated at $1,083 million by NFPA in its Quarterly, published in October. Gas fires were charged with only 2.6 per cent of these losses, an estimated $28.5 million.

Gas-fueled equipment was charged with only 19,800 of the 202,000 fires caused by defective or overheated cooking and heating equipment of all types. Gas equipment was listed as the cause of $16.4 million of the $137.8 million losses attributable to cooking and heating equipment. Fires charged to gas and gas appliances, including gas explosions, were estimated by NFPA at 11,800, with losses of $12.1 million.

Reprints of NFPA's copyrighted article may be obtained in pamphlet form from the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., at 25 cents per copy.

ESTIMATED U. S. BUILDING FIRE LOSSES BY CAUSES, 1959

These estimated figures are intended to show the relative order of magnitude of fire losses by causes, and to indicate year-to-year trends. While they are reasonable approximations based on the experience in typical states, they should not be taken as exact records for each class. These figures by themselves do not show the relative safety in utilization of various types of material, devices, fuels or services and should not be used for this purpose. Reproduction of this table in whole or part is not authorized without written permission from the National Fire Protection Association.

NOTE: The following tabulation is Table VI from a copyrighted 10-page article in the NFPA Quarterly of October, 1960.

	NUMBER OF FIRES		LOSSES	
Heating and cooking (See also Flammable liquid appliances; gas and appliances)		**202,000**		**$ 137,760,000**
Oil-fired equipment defective or overheated	47,400		$ 31,870,000	
Gas-fired equipment defective or overheated	19,800		16,420,000	
Other equipment, including solid fuels, and unknown types	58,200		46,580,000	
Chimneys, flues defective or overheated	43,200		24,660,000	
Hot ashes and coals	18,800		8,750,000	
Combustibles near heaters	14,600		9,480,000	
Smoking and matches		**159,300**		**75,560,000**
Electrical		**122,900**		**193,220,000**
Fixed services, fires due to wiring, equipment etc.	74,000		133,980,000	
Power-consuming appliances	48,900		59,240,000	
Flammable liquids		**57,600**		**40,750,000**
Appliances, including lamps, blow torches, etc.	7,000		5,990,000	
Miscellaneous other flammable liquid fires	50,600		34,750,000	
Rubbish, source of ignition unknown		**57,000**		**21,000,000**
Open flames and sparks		**53,300**		**75,640,000**
Sparks on roof	11,900		5,660,000	
Welding and cutting	5,000		14,320,000	
Sparks from machinery, friction	5,700		18,120,000	
Thawing pipes	2,100		2,910,000	
Miscellaneous open flames and sparks	28,600		34,630,000	
Children and matches		**34,600**		**22,380,000**
Lightning		**29,400**		**26,590,000**
Exposure		**24,600**		**30,300,000**
Spontaneous ignition		**22,900**		**29,800,000**
Incendiary, suspicious		**20,300**		**27,730,000**
Gas and appliances, including gas explosions		**11,800**		**12,100,000**
Explosions, miscellaneous and unclassified		**8,000**		**33,050,000**
Fireworks		**1,500**		**590,000**
Miscellaneous known causes		**21,100**		**44,150,000**
Unknown or undetermined		**57,000**		**312,570,000**
TOTALS		**883,300**		**$1,083,210,000**

A. G. A. Approval Requirements Committee approves new standards for 1962

Additions and revisions to twenty appliance approval and accessory listing requirements were recently approved by the ASA Sectional Committee, Z21, A. G. A. Approval Requirements Committee, at its 73rd meeting held at Los Angeles, California. These new requirements become effective January 1, 1962.

In the domestic appliance field, the new provisions pertain to domestic gas ranges, both the free standing units and built-in domestic cooking units, gas clothes dryers, gas-fired incinerators, water heaters—including automatic storage types with inputs less than 50,000 Btu per hour, side arm types, and circulating tank, instantaneous and large automatic storage types—steam and hot water boilers, gravity and forced air central furnaces, floor furnaces and vented wall furnaces, unit heaters, refrigerators using gas fuel, gas-fired duct furnaces and gas-fired absorption summer air conditioning appliances. In addition, a complete new approval standard for gas engine powered summer air conditioning appliances was approved.

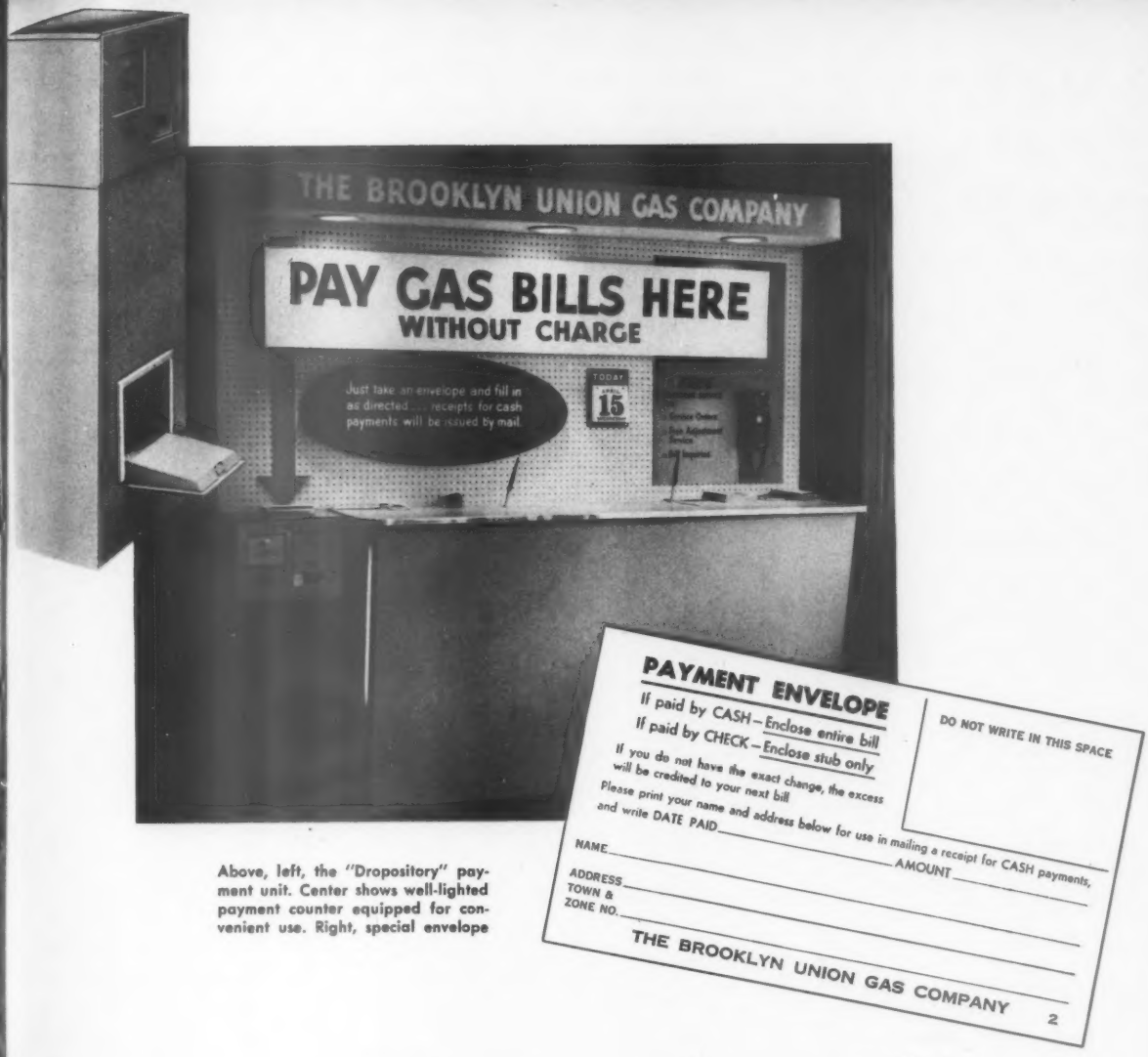
In the commercial field, new provisions are available for hotel and restaurant ranges and unit broilers, deep fat fryers and portable gas baking and roasting ovens.

In the accessory field, new listing requirements for gas appliance thermostats were adopted by the Approval Requirements Committee.

In addition to the adoption of the above revised specifications, the Approval Requirements Committee acted to make selective gas approval effective January 1, 1962 for all gas appliances. Under this arrangement, a manufacturer may select one or more gases with which he desires approval on his equipment.

Gas appliance and accessory manufacturers desiring to have their units tested for compliance with these new provisions by the American Gas Association Laboratories may do so any time in advance of the effective date. Specifications are available from the Laboratories.

REINHOLD H. JOHNSON, *CHAIRMAN* • ARTHUR SKELTON, *1st VICE-CHAIRMAN* CONRAD F. MILLS, *2nd VICE-CHAIRMAN*


THE BROOKLYN UNION GAS COMPANY
PAY GAS BILLS HERE
WITHOUT CHARGE
Just take an envelope and fill in as directed ... receipts for cash payments will be issued by mail
TODAY
15
PAYMENT ENVELOPE
If paid by CASH – Enclose entire bill
If paid by CHECK – Enclose stub only
If you do not have the exact change, the excess will be credited to your next bill
Please print your name and address below for use in mailing a receipt for CASH payments, and write DATE PAID
DO NOT WRITE IN THIS SPACE
NAME
AMOUNT
ADDRESS
TOWN &
ZONE NO.
THE BROOKLYN UNION GAS COMPANY
2

Above, left, the "Dropository" payment unit. Center shows well-lighted payment counter equipped for convenient use. Right, special envelope

Paying gas bills by self-service

By J. L. NEILSON

The Brooklyn Union Gas Company

The Brooklyn Union Gas Company territory consists of 186 square miles, much of which is metropolitan and suburban in character.

In addition to eleven district offices we maintain collection agencies manned by our employees in nineteen plumber stores strategically located throughout the territory.

These collection agencies perform a joint purpose; to promote the sale of gas appliances by exposing the public to the appliance displays in these stores, and at the same time to provide a measure of bill-paying convenience.

An important cost consideration to us and to many other utility companies is the maintenance of existing offices, and the cost involved in providing additional facilities for customers to pay their bills. In general, payments are collected in three or four ways; by mail, by district offices or by collection agents, and in some cases by field collectors. All are becoming increasingly expensive.

In utilities which are actively engaged in the selling of merchandise, as we are, consideration has to be given to the display of merchandise at the locations occupied by the collection agents.

However, a study of the problem of how best to curtail the high cost of providing payment agencies in our territory led us to the conclusion that a possible solution to our economic problem would be to close all our collection facilities in the plumbers' stores and resort to the use of banks and/or American Express facilities.

The effect on customer relations and on the savings that might accrue from

such a change would vary considerably depending upon the timing of the change. Manifestly it would be poor public relations to simply curtail the existing bill-payment facilities without providing some other less costly, though equally satisfactory, means by which customers might pay their bills.

Three alternatives appeared possible.

The first was to close all our agencies at the same time and replace them with bank and/or American Express agencies at no charge to the customer. If the change were undertaken in this manner the effect on customer relations would in all probability be negligible. On the other hand the savings to the company would be reduced by the cost per item paid to the agency, plus the salaries of the employees displaced for the period in which they remain in excess of requirements.

The second alternative was to close all our agencies at the same time replacing them with bank and/or American Express agencies with the customer bearing the bank or American Express fee. The adverse effect on customer relations, however, would in all probability be considerable. The savings which accrued to the company would, however, be materially increased since the only item to be deducted would be the salaries of the displaced employees for the period of time required for re-assignment through attrition.

The third alternative was the gradual withdrawal of the company-operated agencies and their replacement by bank and/or American Express agencies. This appeared to be the most desirable both from an economic and a customer relations aspect. It would be necessary to pay the agency fee until such time as the withdrawal of all company-operated agencies was completed in order to prevent the charge of discriminatory action in areas where company agencies were closed. Once this was accomplished the agency fee would be diverted to the customer. In spite of this temporary loss in savings obtained, it would be more than offset by the ability to dispose of the excess employees by attrition or by re-assignment as vacancies occurred. In addition the adverse effect on customer relations would be held to the minimum.

The complexities involved in arriving at a final decision and an opportune time to implement any of these suggested alternatives were such that no immediate decision could be made.

An urgent need to provide additional facilities in some of our outlying areas not adequately covered by our existing agencies, and a desire to experiment, prompted us to install two "dropository" payment counters manufactured by the Mosler Dropository Corporation. While the use of such a unit in a centrally located and well patronized store is no magic cure-all, it does answer many of the requirements of the customer and the company in outlying areas.

The Dropository Payment Counter is a completely self-contained unit with an envelope supply compartment, a one-at-a-time dispenser in the upper portion, and a fool-proof deposit safe in the lower section. It stands 42″ high, 15″ wide and 10″ deep.

One unit was installed in a plumber's store where we formerly employed a teller, and where our collection cost per item was highest. The second unit was also installed in a plumber's store, but where there had been no previous collection facilities. While the normal payment facilities of our company are available to our customers from 9 a.m. to 5 p.m., Monday through Friday, a customer may avail himself of this type of service on Saturdays in the event the plumber works a six-day week.

In both instances a lighted payment counter with an attractive colored display background was built around the dropository unit. Direct-wire telephone facilities to one of our central offices were also installed for customer convenience in placing service orders or making bill inquiries.

Full instructions for making payments are prominently indicated on the background of the counter. Pens for filling out the necessary information on the especially designed payment envelopes are also provided on the counter.

These counters, while rigid enough to prevent casual movement, are designed to be readily removable in the event they are required to be installed at another location. The dropository unit itself is bolted to the floor as a precautionary measure.

The unit is emptied once a day by a messenger from our nearest district office charged with the job of maintaining the unit.

These payments are transported to this district office where the envelopes are opened and their contents checked with the amount shown on the face of the payment envelope. Any discrepancy is drawn to the customer's attention within twenty-four hours.

For cash payments only, a receipt stamp is placed in the space provided at the top right hand corner of the payment envelope which, now a receipt, is placed in a window envelope that only shows the name and address that the customer has noted on the face of the payment envelope. It is then mailed to the customer.

After this operation is completed, the money is counted and added to the regular district office receipts for the day. Both units have been in operation since December 1,1958, during which period approximately 23,000 payments have been received. Only a few disputed items have been involved since the inception of these self service centers.

At the location formerly teller-operated, we experienced considerable initial reluctance on the part of customers who preferred the issuance of a receipt by a teller, but after a trial, about 50% continued to use the new facilities. In contrast, in an urban area where no local agency formerly existed, the customers using the new self service center were pleased with the additional convenience.

We find that many customers make a practice of taking a payment envelope home to be filled out and used in paying their next bill. Consequently they need only deposit the envelope containing the exact payment amount in the dropository on the next visit.

In a closely knit metropolitan type of area where the objective is normally one of conserving labor costs or in the sparsely populated areas where the problem is usually the expansion of payment facilities at a reasonable cost, the following facts should be borne in mind by those who might find merit in using this type of payment facility.

The experience derived from the operation of our two units indicates that when the number of units in use exceeds one or two to an area or district office it is no longer possible to service these units by temporarily withdrawing an employee from the district office to perform the task of collecting the payments from the dropository units. It would become necessary to create a permanent messenger service.

Also the staff of the office concerned with the handling of these dropository units would most likely have to be augmented because of the necessity to man-

(Continued on page 34)

Gas air conditioners hit of show

New small-tonnage units in Arkla booth drew attention

A. G. A.'s "Mechanical Man" puts on his act in front of the Caterpillar area

Ready-Power exhibit had two gas-engine air conditioners

Four manufacturers of air conditioning equipment exhibited under the Blue Flame banner at the recent International Heating & Air Conditioning Exposition of the American Society of Heating, Refrigerating and Air Conditioning Engineers in Chicago the week of February 13. Those cooperating in the A. G. A. Combined Exhibit in the International Amphitheatre were: Arkla Air Conditioning Corp., Little Rock, Arkansas; Caterpillar Tractor Co., Peoria, Illinois; The Ready Power Co., Detroit, Michigan; and A. O. Smith Corporation, Kankakee, Illinois.

Never before in the history of these expositions have so many people thronged the aisles for the entire show period, day and night. More interest was exhibited in air conditioning specifically than previous shows and the collective opinion of the exhibitors was that the entire show was an outstanding and profitable success.

In the A. G. A. area, Arkla showed packaged units including a 3½ ton chiller-heater with 120,000 Btu input; a Sun Valley, 6.4 ton refrigerator-heater with 180,000 Btu input; a Sun Valley, 4.3 ton unit having 120,000 Btu input; an Arkla 25 ton chiller-heater with 560,000 Btu input; and a remote outside heating-cooling unit of 5 tons capacity and 180,000 Btu input.

Caterpillar exhibited a 280 hp gas engine for direct connection to a compressor. It was completely equipped for automatic starting and stopping, electric starting and Minneapolis-Honeywell Controls.

Two gas engine units were shown by Ready Power, one having a capacity of 110 tons of air conditioning and the other 30 tons.

For absorption type air conditioning, A. O. Smith displayed two hot water boilers having 110,000 and 420,000 Btu input respectively.

To add further interest in the A. G. A. area, a "Mechanical Man" impersonator attracted hundreds and literally stopped all traffic with hourly performances in which he pointed out specific features of the displays. On each of the four days of the show, he limited his performance to

one exhibitor, thus covering all the cooperating exhibitors during the four-day show period.

Another added attraction was the giving away of gas cigarette lighters which were drawn by lot from stubs deposited by those who registered at the booth where the "Mechanical Man" was doing his act. Lighters were supplied to each exhibitor by the Industrial and Commercial Gas Section.

Other large and attractive exhibits by other manufacturers of gas-utilizing air conditioning equipment were situated outside of the A. G. A. area. Included were such firms as Carrier Air Conditioning Company, The Trane Company, Worthington Corporation, and York Corporation.

During show week, several press conferences were held by major manufacturers of air conditioning equipment. Among those of particular interest to the gas industry were those held by Cleaver-Brooks Co. and Arkla. The former was held in the new exposition hall, McCormick Place, and included a tour of the building, especially those sections where the heating and cooling originated.

At the time of the tour, midwinter, it was noted that the four 600 hp boilers were all on gas.

The presentation by Arkla was a complete coverage and explanation of the entire air conditioning market in the smaller tonnage field which included residential and small commercial units up to 25 tons.

El Paso survey

(Continued from page 15)

ticipated in the interviewing, including three vice presidents, the company controller, executive assistant, industrial relations director, tax and insurance director and nine district managers.

This was a new experience for the managers whose role is often a defensive one because of contacts with dissatisfied gas customers. And it proved an even more revealing experience for the home office personnel whose customer contacts are very limited.

The survey was widely publicized before and during the three days of interviewing. Newspapers, radio and TV advertising and publicity releases were used to notify the public in advance, and employees were briefed two weeks ahead of time in anticipation of questioning from the public.

Late in November, Southern Union hosted a press luncheon for El Paso newsmen to give them advance information of the survey, and a week later 50 El Paso business and clubwomen were guests at a luncheon where company survey plans were explained.

Early in December, all Southern Union personnel participating in the survey attended a half-day training session on how to follow sampling procedures and the importance of obtaining maximum information from the interviews. The training session included a film on interviewing techniques, full discussion of the questionnaire and practice interviewing.

El Paso had been divided into 90 survey districts. Assignments were made so that each interviewer covered 12 areas during three days in different parts of the city. The men—using a "buddy system"—traveled in pairs, covering the same areas but calling on different homes. Sampling was controlled so that the number of interviews in each of the survey districts was proportionate to the number of residential customers.

Since El Paso is a border city, a number of the housewives speak only Spanish and bi-lingual Southern Union employees accompanied the interviewers as interpreters when necessary.

Interviewees were asked questions about the service they had received from Southern Union; their opinions and impressions of ownership and regulation; recollection of gas utility advertising and their preference of fuels for household use.

According to the results contained in Mr. Louis' 45-page report, 63 per cent of the housewives interviewed have a "very favorable opinion" of the company; 29 per cent, a "fairly favorable opinion"; two per cent, "not very favorable" and six per cent, "no opinion."

Apart from its function as a gas distributor, Southern Union tended to fade out of public consciousness, resulting in widespread gaps in the public's knowledge about the company. Indications are that the structure of opinion would be even more favorable if the public knew more about the company and its participation in civic activities.

Approximately two of every three persons did not realize that the City of El Paso regulates rates charged by the company, although public opinion favored regulation.

Of all households interviewed, 57 per cent said stockholders owned the company, 10 per cent presumed the city or state did and 33 per cent didn't know that Southern Union is owned by stockholders.

While the survey indicated that gas still holds a strong position in home heating, cooking and water heating, substantial inroads are being made by electricity for cooking and water heating, particularly in upper income brackets.

As a follow-up, critiques with key personnel have been held, where the results were thoroughly discussed and conclusions drawn as to what action the company should pursue to take advantage of information obtained from the survey.

The results of the survey were reported to the public in special newspaper advertisements and publicity releases. Copies of the survey report have been distributed to various city officials in El Paso and a special report of benefit to the Home Builders Association of El Paso has been presented to them.

Aside from the tangible, there are also intangible results. The company now has an additional 481 centers of influence in El Paso. Employees themselves have been impressed with the importance of the project and the significance of top-management is coming to town on a fact-finding expedition.

Mr. Reid states that the survey has had a marked effect on day-to-day operations in El Paso as well as other areas served by Southern Union, and he notes that changes are presently under way for improvement in various aspects of the company's business.

How to obtain booklet on telephone manners

Interest in the booklet, "Speak Well—Sell Well," by Paul Mills and Bernie Roberts, mentioned in the March issue of the MONTHLY, has been such that publication of information on how to obtain it has been requested.

Details are as follows:

The 32-page booklet is published by Sales Power, 17 East 48th St., New York 17, N. Y. Single copies are priced at $1.00, with quantity discounts available.

DENVER *in* MAY *for* TRANSMISSION CONFERENCE

As part of a continuing effort to promote more efficiency in the natural gas industry, automation and the use of computers will be stressed at the Operating Section's Transmission Conference May 25-26 in Denver, the "mile-high city."

The two-day annual conference will be held in the Brown Palace and Cosmopolitan hotels. About 500 delegates are expected to attend.

Neal B. LauBach of the Colorado Interstate Gas Co., Colorado Springs, will discuss "The Integration of Automation in The Gas Industry" at the opening session Thursday, May 25. Mr. LauBach is chairman of A. G. A.'s new Automation Committee.

John E. Towle of the Columbia Gas Systems Service Corp., Columbus, Ohio, will give a report on the Computer Committee at the same session. Mr. Towle is chairman of the committee, which was formed recently to consider application of digital and analog computers to engineering and operating problems in the gas industry.

S. A. Bradfield, chairman of the Transmission Committee, will open the conference. Delegates will be welcomed to Denver by Mayor Richard Batterton.

Other speakers at the opening session include: Samuel J. Cunningham, A. G. A., New York, who will discuss pipeline research; E. E. Stovall, Lone Star Gas Co., Dallas, whose topic will be "What's Ahead in Gas Measurement"; H. M. Joiner of The Peoples Natural Gas Co., Pittsburgh, who will talk on "Gimmicks and Gadgets"; and Dr. W. Orr Roberts of University Corporation for Atmospheric Research, Boulder, Col., "Frontiers in Atmosphere." Mr. Roberts' talk will cover advances in weather prediction techniques of vital interest to the gas industry.

The gas business in Russia will be discussed by W. W. Keeler, Phillips Petroleum Co., Bartlesville, Okla., at the Friday morning general session at 9 o'clock. Brother B. Austin Barry of Manhattan College, New York, will discuss "Pipeline Engineering by Photogrammetry." He will illustrate his talk with three-dimensional slides.

The use of an abandoned coal mine for the storage of natural gas will be explained by R. E. Kelly of the Public Service Co. of Colorado, Denver. Other speakers at the Friday morning session include: R. W. Todd, Pacific Lighting

(Continued on next page)

Special activities are planned for wives of delegates to the Transmission Conference. Included will be a luncheon, entertainment and a tour of Denver attractions, and other events. Mrs. Shirley Taylor, Public Service Company of Colorado, will be in charge of arrangements.

S. A. Bradfield, Transmission Committee, will preside on opening day

G. C. Grow, Underground Storage Committee, presides on May 26

Gas Supply Co., Los Angeles, who will give a summary of the annual report on underground gas storage statistics, and E. V. Martinson, Northern Natural Gas Co., Omaha, who will present a review of aquifer storage projects.

Five afternoon sessions will be held at 2 o'clock May 25 on communications, compressor stations, gas dispatching, gas measurement and pipelines. On the afternoon of May 26 there will be sessions on compressor stations, pipelines and underground storage.

Of interest during these individual sessions will be a panel discussion on "Modernization of Older Stations—Trends Toward Automation." This will be held during the compressor stations session Thursday afternoon. L. R. Henry of the Colorado Interstate Gas Co., Colorado Springs, Col., will discuss "Progress in the Development of Automatic Pipe Lines" the same afternoon at the gas dispatching session.

At the Friday afternoon session on compressor stations, a representative of the Columbia Gulf Transmission Co., Houston, will speak on the performance of a jet-powered turbine installed on a long-distance pipeline.

Advance programs may be obtained from Operating Section, A. G. A.

New Arkla units

(Continued from page 9)

He pointed out that this expanded line of central units is aimed at helping achieve an announced gas industry goal of one air conditioning sale out of every four for gas by 1965.

"With this accelerated pace of absorption research and development, the gas industry anticipates attaining this sales goal considerably sooner than that," Mr. Wepfer said.

The industry's 1961 goal is 25,000 units—more than double its 1960 sales.

The Arkla official pointed out that selection of capacities within the 2-to-6.4-ton range is generally based on fulfilling all possible load calculations in this market area, with allowances for oversizing of application by no more than 10 per cent and undersizing by not over 15 per cent.

"An analysis of total central-unit shipments during the first half of 1960 shows that gas air conditioning, even with units available in only the three and five-ton ranges, was theoretically eligible for 50 per cent of the total market of nearly 170,000 units of all types.

"However, because of the emphasis placed on price in the tract-building and similar markets and various application limitations, it's estimated that gas really was eligible to compete for only about 20 per cent of the total central air conditioning business, or roughly 33,000 units. Since gas air conditioning unit shipments during the period totaled about 8,000 units, we know we got one out of every four sales for which we were actually eligible.

"By more than tripling the Arkla line both from the standpoint of capacities and design—to include additional year-round remote units, as well as remote add-on cooling, downflow and upflow applications—we intend to boost our eligibility to sell from last year's 20 per cent to near 80 per cent by the 1962 cooling season," Mr. Wepfer noted.

He said that, in developing these new intermediate capacities, Arkla engineers have been able, in most cases, to increase tonnage ratings without materially enlarging unit sizes. For instance, the Model 650 4.3-ton is practically the same size as the Model 500 3½-ton, and the Model 850 6.4-ton bears approximately the same over-all dimensions as the Model 750 5-ton—despite 23 per cent and 28 per cent increases in capacity.

"This constitutes part of the design 'breakthrough' we have been able to accomplish," he explained.

Mr. Wepfer added that, because this greater capacity availability will make it possible to utilize gas equipment that will more closely match load calculations, "installation cost savings as high as 20-25 per cent can result from no longer needing to oversize jobs excessively, or from being able to use one or two units where two or three used to be required, and similar cases in which lack of capacities and designs formerly limited us."

"Diamond" meter is 75,000th

Piedmont Natural Gas Co., Spartanburg, S. C., recently celebrated the extension of natural gas to its 75,000th customer, who received from the company a built-in gas range by Caloric

Even though cast iron pipe is a rugged material, care in handling it still is an essential

Installation of cast iron pipe

By WALLACE T. MILLER

Assistant Managing Director
Cast Iron Pipe Research Association

A gas main installation project should logically start with the preparation of a plan. Whether the project is to be installed under a contract or by utility forces, a detailed plan should be provided which would show other underground utilities which might be encountered.

Cast iron pipe is a rugged material and doesn't have to be handled with kid gloves. Despite this, it is desirable to use reasonable care in handling pipe. Damage can result from improper handling.

Pipe is occasionally inspected by the purchaser, at the foundry, in the process of manufacture, but should also be inspected at the site of the work. Pipe can be tested very readily, in a sling, by means of a hammer test for a ringing sound. A true ring will indicate that no damage has taken place in transit or in handling at the site of the work. In case of doubt, pipe should be given a visual inspection over its entire length.

When pipe is placed in a storage yard, 4" by 4" stringers should be placed between layers, and the height of the pile should be limited to prevent excess loading on the bottom layers. Some years ago, information was developed as to permissible stacking heights for pipe. These data show that for small diameter pipe there is little danger of over-loading on bottom layers. With larger diameter pipe, 24 inches or larger, the limitation is two or three tiers, depending on length, thickness and support.

One feature worthy of special mention is the care of other structures. Not only is it important to protect the many other utilities in the street in the course of construction but it is also essential to avoid resting the pipe on any other structure or to have it support any other structure.

Trench Preparation

Specifications are usually written from the point of view of obtaining ideal conditions, but it is not always possible to reproduce those conditions in a trench. In any case, it is very desirable to provide a firm, even bearing for the pipe in the trench. Excavation under the bell is required to permit the entire length of the barrel to be supported uniformly.

The width of the trench should be ample to permit the pipe to be laid and jointed properly. In general, a minimum clearance of not less than six inches on each side of the pipe is satisfactory for installation at average depths.

Unstable material should be removed to a depth of six inches or more and replaced with tamped layers of selected fill or sand. Ledge rock, boulders or large stones must be removed to provide a clearance of a least six inches below and on each side of the pipe. Pipes larger than 24 inch diameter require greater clearance.

Pipe Laying

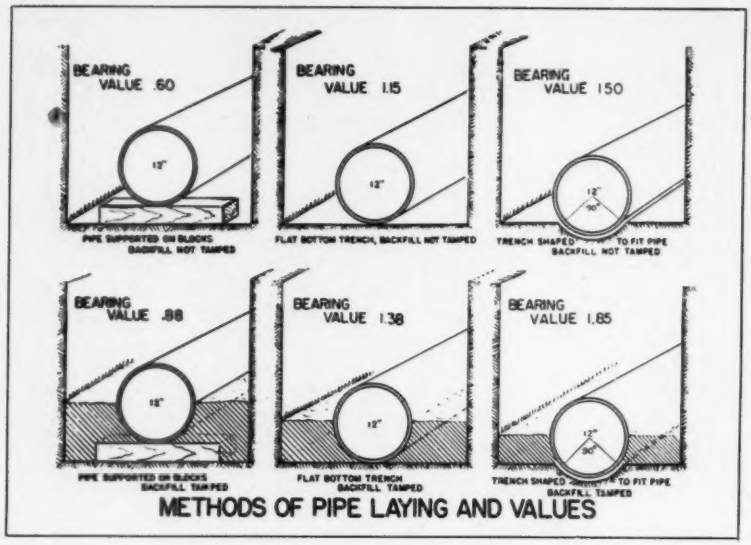
Pipe should be carefully lowered into the trench, using mechanical equipment whenever available. After placing in the trench, each pipe should be swabbed or brushed out to remove any foreign material.

One of the most important factors in gas pipe installation is to obtain a firm, even bearing for each length of pipe. The American Standards Association Committee A-21 is responsible for the development of the current specifications used for cast iron gas pipe. Before proceeding with the preparation of these specifications, Committee A-21 undertook the development of a design formula that was based on an extensive series of tests to determine the actual stresses that pipe must resist when installed underground. The committee also gathered and studied a vast amount of information and records of experience. The method of design which was developed represents a truly scientific basis of design. (American Standards Association—"Manual for the Computation of Strength and Thickness of Cast Iron Pipe"—ASA-A21.1.)

The most important factor included in the present design formula is an exact determination of the effect of external loading, including trench loading, surface loads, and impact which may be transmitted by trucks moving over a rough trench surface.

The type of trench bottom used for installation has a definite effect on these external forces. Tests were made to evaluate the various methods of laying pipe and bearing values were determined. (See illustration—Methods of Pipe Laying and Values.)

Of the six types of trench bottoms considered and evaluated four are in common usage for gas pipe installation. Flat bottom trench, with or without backfill tamped, as shown in the two center diagrams, are the most common methods of laying gas pipe. Pipe supported on blocks, shown in the two


BEARING VALUE .60
PIPE SUPPORTED ON BLOCKS BACKFILL NOT TAMPED
BEARING VALUE 1.15
FLAT BOTTOM TRENCH, BACKFILL NOT TAMPED
BEARING VALUE 1.50
TRENCH SHAPED TO FIT PIPE BACKFILL NOT TAMPED
BEARING VALUE .88
PIPE SUPPORTED ON BLOCKS BACKFILL TAMPED
BEARING VALUE 1.38
FLAT BOTTOM TRENCH BACKFILL TAMPED
BEARING VALUE 1.85
TRENCH SHAPED TO FIT PIPE BACKFILL TAMPED
METHODS OF PIPE LAYING AND VALUES

diagrams on the left, is the poorest way to lay underground pipe. Shaping the bottom of trench to fit the pipe, as shown in the two diagrams on right, places the minimum stress on the pipe. Tamping backfill up to the center line of the pipe is desirable.

The bearing values are different for various sizes of pipe and represent an important factor in determining the thickness of the pipe. Bearing values shown are for 12 inch pipe. Note the increased bearing values in all cases where backfill is tamped up to the center line of the pipe.

Jointing

A mechanical joint was developed about 30 years ago and has proven to be a completely satisfactory joint for cast iron gas main installations. This joint utilizes the basic principle of the stuffing box. A flange is cast integral with the socket, or bell of the pipe. The contact surfaces on both bell and spigot are cleaned by brushing to remove any foreign material. The surfaces and gasket should also be brushed with soapy water to lubricate the gasket during assembly. The gasket is placed on the spigot end of the pipe and the spigot end is then centered in the bell. A follower gland is moved into place and bolts tightened uniformly to bring the gasket into its final position. For most sizes, a 10" ratchet wrench operated by the average worker will give the proper torque. Torque measuring wrenches may be used to check the bolt torque which has been applied on the bolting of various sizes of pipe. The entire operation of the assembly of the joint is very simple.

During recent years, several gas utilities have installed cast iron pipe by assembling joints above the prepared trench and then lowering the assembled pipe line to the bottom of the trench. Mechanical joint pipe is very adaptable to this method of installation.

Blocking

For mains carrying high pressure, supports should be constructed behind all bends, tees, caps or plugs to prevent movement. The use of piers placed against undisturbed earth may be desirable where pressures are unusually high. Determination of the extent of the blocking will depend on how much thrust can be expected at any particular point.

Backfilling

Material should be placed in such a manner that future settlement is reduced to a minimum. The material used should be free from cinders, ashes, refuse, rocks or other unsuitable material. When excavated material is not suitable for backfilling, it should be removed and sand, gravel or other suitable material used instead. From the bottom of the trench to the center line of the pipe, all trenches should be backfilled by hand, and adequately tamped. In placing the remainder of the backfill, care should be exercised to avoid injuring or moving the pipe. Frozen backfill material should not be used. There are several methods for obtaining compaction of backfill in that portion of the trench above the pipe line and the determination of the most suitable method depends to some extent on the type of material used.

Safety

Recognized safety procedures should be practiced from the very inception of the project to the completion of all work performance. Suitable mechanical equipment and the proper tools will assist in providing the desired protection to both construction forces and the general public. It is of utmost importance that supervisory forces be safety conscious and safety minded on any pipe laying project.

Laclede outdoor advertising wins first prize

This design for Laclede Gas Co., St. Louis, Mo., won first place in the local classification at the 29th National Competition of Outdoor Advertising Art of the Art Directors Club of Chicago, Ill. D'Arcy Advertising Company was the agency, G. E. Smith, the artist, Bob Ertell and Gene Kowall, art directors

New cooling goals

(Continued from page 7)

cago: "The average gas utility makes approximately 37 per cent of its profits during the January-through-March heating months and only 10 per cent from July through September. With the addition of gas air conditioning to the load, the gap between the 10 per cent and 37 per cent can be greatly narrowed."

L. T. Potter, president of Lone Star Gas Co. and current president of the A. G. A., told the Southwest regional meeting in Dallas: "We have got to sell what we have—gas air conditioning and other gas appliances and equipment—like we've never sold before. The battle lines are clearly drawn between gas and electricity. It's now or never!"

Enthusiasm ran high among the gas industry leaders over the 15,000-unit goal for 1961. This would be nearly a 70 per cent increase over 1960 sales of almost 15,000 units. Sales quotas have been assigned by geographic areas according to number of meters, climate and other factors. Said Buell G. Duncan, president of Piedmont Natural Gas Co., Inc., in Birmingham: "I consider the 25,000 goal as minimum. Our company certainly plans to equal or exceed the quota for our system."

In other talks at the four air conditioning seminars, the gas industry executives heard that:

- The markets for gas air conditioning are practically untapped.
- By virtue of increased unit capacities and designs from 2 through 6.5 tons to be made available by the principal small-tonnage equipment manufacturers, Arkla Air Conditioning Corp. and Bryant Manufacturing Co., in the next 12 to 18 months, gas air conditioning's "market eligibility" is expected to almost *quadruple to 80 per cent.*
- A gas air conditioning sales program is a logical step for any gas utility to take, air conditioning sales should have a position of primary importance in any gas company, it should be a company-wide effort, and sufficient salesmen should be utilized to cover the available market. It was pointed out that one salesman for every 40 units sales is a minimum requirement.
- To achieve success in gas air conditioning sales, a utility must maintain acceptable installation standards and service responsibility.
- Special summer rates, flexible, long-term financing plans and leasing programs are valuable sales tools.
- Air conditioning salesmen should be well-trained, enthusiastic and productive, though they need not be graduate engineers.
- In the nation's top gas companies in air conditioning sales, these elements are present: Top-calibre sales effort, company-wide recognition of the importance of the air conditioning department and "air conditioning consciousness," service responsibility, hard-sell promotion and aggressive top management support.
- The importance of aggressive sales prospecting—and selling—by employees and through numerous other sources also received great emphasis.

Arkla sales manager, W. G. Wepfer, announced at the meetings his company's product marketing plans for the next year, including introduction of three models of a 4.3-ton Sun Valley, "down-flow" unit, a 6.4-ton "All-Year" model, a 5-ton "remote" unit, several new fan-coil-filter assemblies, and tentative plans for gas equipment in the 2-ton range.

Mr. Wepfer also previewed the Arkla "Road Show," a series of ten script-and-colored slide presentations for use by gas companies to carry the gas air conditioning sales effort to the "grass roots" level during 1961. They will cover such subjects as "Prospecting," "How Gas Air Conditioning Works," "Meeting Electric Competition," and "Why Gas Air Conditioning?" with several skits. He also announced plans for an Arkla program of achievement awards to recognize companies and individuals for outstanding sales performance.

David W. Hoppock, vice president in charge of sales for Bryant, likewise discussed his company's plans for sales promotion and other product development and marketing endeavors.

Speakers at the four meetings were:

Birmingham: Richard A. Puryear, president of Alabama Gas Corp., presiding officer; S. F. Wikstrom, A. G. A.; H. H. Phipps, commercial sales manager, The Houston Corp.; Clarence Cook, Alabama Gas; Buell G. Duncan, president, Piedmont Natural Gas Co.; and Jack A. Bell, president, Gas Light Co. of Columbus, Ga.

Chicago: Marvin Chandler, president, Northern Illinois Gas Co., presiding; Kenneth F. Muldoon, of the A. G. A.; Robert Calrow, assistant vice president, Minneapolis Gas Co.; W. W. Selzer, vice president, Western Kentucky Gas Co.; James J. Condon, manager of domestic sales, Peoples Gas Light and Coke Co.; and John S. McElwain, gas sales manager, East Ohio Gas Co.

Dallas: L. T. Potter, president, Lone Star Gas Co., and president, A. G. A., presiding; N. D. Jennings, A. G. A.; Charles G. Barndt, director of promotion, Lone Star Gas Co.; A. B. Banowsky, utilization sales director for the Texas distribution divisions of United Gas Corp.; B. E. Harrell, vice president, gas supply, sales and sales promotion, Arkansas Louisiana Gas Co.; and R. H. Combs, Tulsa District sales director for Oklahoma Natural Gas Co.

Boston: Charles G. Young, president, Springfield Gas Co., presiding; Ralbern H. Murray, secretary, A. G. A. Industrial and Commercial Gas Section; Jim McCarthy, volume sales manager, Providence Gas Co.; Philip Sheehan, assistant to the director of PAR, A. G. A.; John Surbeck, gas air conditioning advisor, Manufacturers Light & Heat Co.; and Paul Connell, air conditioning sales manager, Cambridge Gas Co.

Meet your staff

(Continued from page 8)

ten days training. Almost immediately, he was appointed personal photographer to the commanding general. As such he covered inspection trips by Secretary of War Baker, Assistant Secretary of the Navy Franklin D. Roosevelt, visiting Congressmen including Fiorello La Guardia, and President Wilson.

Art evidently did see some action because he was awarded a Battle Citation, the Croix de Guerre with Silver Star and the Victory Medal with Silver Star and six bronze stars.

Art and his wife Kay are very active in community affairs in Mount Vernon where they live. Art is Head Usher Emeritus of his church, and holds memberships in the Overseas Press Club and the Industrial Publicity Association, of which he is a past president.

His hobbies are photography, model railroading and cats. So he is anxious to get to that retirement home in the Berkshires, where he can get his thirteen locomotives and some two hundred cars rolling.

Executives face up

(Continued from page 11)

In conclusion, Professor Fleming commented that the creation of new jobs through automation is widely overestimated. Unless industry can provide full employment, management may have to rethink its positions in regard to the role of government, retraining, severance pay and similar questions. In the case of severance pay, he indicated that lump sum payments were perhaps less desirable than periodic payments in assisting relocation.

Carl A. Ulffers, Jr., assistant vice president, American Telephone & Telegraph Company, told delegates that the six per cent rate of profit for regulated industries is obsolete, since it does not under present conditions provide for adequate growth to meet future needs.

Under the title, "The Need for Profit in a Regulated Industry," Mr. Ulffers said:

"Profits, performance and progress go hand in hand. All three are necessary or the others will deteriorate. Better profits mean better products mean better progress."

In the long run, he stated, better profits actually will reduce prices to the consumer, through the improved production which they make possible. Such profits he called "the energizer of business."

Lacking sufficient profit incentive for growth, utilities may travel the path of the railroads, Mr. Ulffers warned, ultimately facing the threat of public ownership when they are no longer able to serve the public adequately.

As a counter to the six per cent concept, Mr. Ulffers recommended the principle of regulated profits "on the same level as well-managed non-regulated businesses."

This principle already has been recognized in some courts, including the U. S. Supreme Court.

Regulation of profits and depreciation on the basis of original cost also is obsolete, Mr. Ulffers said. The principle was accepted by utilities after World War II in order to get on with a tremendous expansion job. But it does not make sense in an inflationary period, when everything must be replaced at higher current costs. Corrective legislation is needed to adjust this inequity, he said.

Mr. Ulffers appealed to all gas industry executives to continue efforts toward the end of obtaining such legislation.

Featured speaker at the conference luncheon Monday was Lester T. Potter, president of A. G. A. and president, Lone Star Gas Company.

Taking as his subject "Mobilizing Management for Gas Industry Growth," Mr. Potter began by citing A. G. A.'s Gas Industry Development program as a good example.

Mr. Potter outlined four areas in which management must "look beyond its nose":

1. Supply and demand for gas. The "20-year supply" concept is inadequate, since it does not take into account the geographical pattern of supply, which could change greatly in 20 years. Definitive thought on this point could "change the posture of the gas industry as much as any other one thing."

2. Air Conditioning. "Year round air conditioning *is* the future of the gas industry," Mr. Potter said. "It has fantastic economic possibilities."

Studies undertaken on his own company's system, however, show that to achieve a 25 per cent saturation by 1970, more and better air conditioning equipment will be needed. Particularly needed is a gas-operated window unit.

"We are acting like an industry that cannot decide whether it *wants* to be in the air conditioning business," Mr. Potter said.

The job cannot be done with the equipment that is available, but "we can get what we *need* by selling as hard as we can the equipment we *have* today."

3. Research. The research committees of A. G. A. are doing an excellent job, he said, but essentially as project selection committees. More research planning is needed as a function of general management. Decisions are needed on what direction research should take. One possible direction, Mr. Potter indicated, could be toward the "one-utility service" in which all power needs would be met by gas.

4. The science of joint effort. Though an art at present, joint effort ought to be a science. "Joint effort is the Number One responsibility of management," Mr. Potter said. "Here is our great frontier." What he meant by joint effort "goes way beyond personnel administration," he said, to the ultimate responsibility of management, which cannot be delegated, to "bring into reality what is now an imagined hope."

In the Tuesday general session, William B. Tippy presiding, speakers were led by Harry H. Fitzgerald, vice president, Commonwealth Services Inc.

In "Economics of Underground Storage," Mr. Fitzgerald discussed the most widely accepted solution to the problem of handling distribution peak loads while maintaining a reasonably constant pipeline load factor.

Mr. Fitzgerald pointed out that in basic objectives, the three segments of the industry pull in opposing directions.

Distributing utilities desire to sell all the gas they can, and would therefore like to have variable delivery from the pipeline without penalties.

Producers want to sell their maximum allowable production every day, and therefore desire to sell the same high amount of gas every day.

Pipelines must contract for minimum purchases, yet must supply day-to-day needs of utilities. At the same time, they must serve the interests of their own stockholders.

Since it is at present primarily the heating load which makes distribution operations profitable, utilities must find ways to serve heating customers regardless of peak load problems.

Pipelines, on the other hand, because of high fixed costs, must maintain maximum flow. They also must usually sign "take or pay" contracts with producers.

The most promising solution to these dilemmas appears to be underground storage of pipeline gas transported at periods of low distributor demand.

Yet, under present regulatory provisions, Mr. Fitzgerald said, there is no direct incentive for the pipeline itself to invest in underground storage facilities. This fact tends to promote uneconomical use of pipelines at less than maximum year-round capacity, or construction of additional pipelines, resulting in increased costs for the delivered product. These must eventually be paid by the consumer. However, they also affect the future prospects of the gas industry wherever cost of gas already is near the cost of competitive fuels.

The burden of constructing underground storage facilities thus has continued to fall mainly on distributors. Even so, some pipelines have become interested in underground storage.

Light peak shaving can be handled well enough by tank storage of propane or manufactured gas. Large-scale interruptible sales to industry also can provide a solution in some cases. However,

where deep peak shaving needs cannot be met by either of these means, underground storage presents itself as the practical solution.

Whether to invest in facilities depends on the cost of construction when balanced against the anticipated gain from potential sales.

Depleted oil or gas wells usually provide the most satisfactory storage sites. When none of these exist in the local area, it then becomes desirable to explore for underground aquifer formations which could hold gas, even though they have not contained natural deposits. Such aquifers must meet all requirements of permeability, porosity, and closure, and must be of the right size and distance from the area to be served. Development of such aquifers often is more costly than utilizing depleted wells, but may justify the expense, Mr. Fitzgerald said.

Regardless of distributor activity in this field, it remains economically desirable that pipelines be induced to invest in underground storage, Mr. Fitzgerald said. For this, regulatory changes are needed.

John J. Corson, director, McKinsey & Company, Inc., warned delegates of growing government influence in "The Evolving Mix of Public and Private Enterprise."

Mr. Corson spotted eight trends in this direction:

1. Government protection of the underdog. Including such areas as Social Security, unemployment insurance, and health and welfare services, this trend is due to continue.

2. Rising government expenditures. With modern technology and defense involving many outlays too large for private industry, this trend likewise will augment, even though carried out under a "de-socializing" policy of farming out many Federal government contracts to private concerns.

3. Increasing government responsibility for scientific research. This trend is supported by private business, which may benefit from research results even though these come from government-sponsored programs.

4. Government-operated businesses. Though the Federal government has been getting out of many small business enterprises it formerly engaged in, it has been taking on others, such as space exploration, for which private industry is not equipped. Lease-lending of computers may be another example of business in which government participation may be necessary. Urban transport may be another. A score of agencies, including the Department of Interior, which is the largest single lessor of oil and gas rights, already are occupied with assignments regarded as "too important to trust to private business."

5. Government subsidies and assistance to selected businesses. Concepts of the national interest probably will continue to dictate growing government aid for certain industries such as shipping, housing, air transport, and the like.

6. Government support for business activities overseas which happen to be in line with foreign policy. Often these offer only a distant prospect of profits, and so must be underwritten by various governmental concessions, subsidies or guarantees.

7. Government action to promote business stability. This includes expenditures to even out business dips or ameliorate their effects. This responsibility of government is increasingly accepted, even by businessmen.

8. Steady extension of the government's regulatory reach. The effectiveness of such regulation, severely criticized by the recent Landis Report, directly affects the costs and conditions of management in regulated industries. Quality of regulation may improve, but its quantity will probably continue to grow.

Mr. Corson offered little hope of any significant alteration in these trends, as they are determined by forces too large for control. However, he said that managers can still find freedom for business action and decisions in spite of the growing role of government in the economy. One area for increased private action is, paradoxically, public affairs.

"Business aloofness from politics and public affairs is obsolete," Mr. Corson said. "In a mixed economy, there is need for vigorous expression of views from every participating group."

E. Clyde McGraw, president, Transcontinental Gas Pipe Line Company, in "Our National Energy Dilemma," called attention to the efforts of the coal industry to "deprive people of their rights to a free choice of fuel" under the guise of a National Fuels Policy.

This effort is based largely on an attempt to mislead the public as to the future adequacy of gas supplies, by comparing coal reserves, practically all of which are known, to gas proved reserves, which represent only that minor fraction of total gas reserves which already has been discovered. This maneuver leads to the oft-heard claims of there being but a "20-year supply" of gas. It ignores the fact that each year new discoveries add more gas to proved reserves than is withdrawn for consumption.

The coal industry also attempts to deceive the public by claiming that interruptible sales of gas at low rates to industrial users results in increased prices to residential users. This is the exact opposite of the truth, which is that such interruptible sales lower costs to residential customers by helping to pay the fixed costs of pipeline and utility facilities and operations. These costs otherwise would have to be borne entirely by the residential user in the form of higher rates.

In order to combat the coal industry's misleading statements, the gas industry already has declared its willingness to cooperate in the study of a National Fuels Policy now being contemplated by the Administration.

Gas industry management must see to it that both Congress and the public are correctly informed on this issue. "The truth must be made known," Mr. McGraw said, "lest unwise action add additional horns to our national energy dilemma."

Luncheon speaker on Tuesday was J. Lewis Powell, consultant, U. S. Department of Defense, whose lecture, "Collapse of Time—Cave Man to Space Man" was an entertaining exposition of the thesis that more than 90 per cent of man's total progress in the past 50,000 years has taken place in the last 15 years, beginning in 1945. "For the first time," Mr. Powell said, "man has discovered that progress need not be an accident. He has discovered that he can make progress on purpose." So rapid has change become, that experience is no longer a good guide to action, and "inspiration has become more important than perspiration.

"This is the first age on earth in which thinking became really important."

The final day's general session, Gordon C. Griswold presiding, was opened by an address on "The Safe Sixties," delivered by R. N. Papich, safety manager, A. G. A.

Mr. Papich called attention to a set of statistical tables showing that for dis-

abling accidents gas ranks worse than the average of American industries.

"The product is not the problem," Mr. Papich stated. "Gas is safe. It has been proven that you can do anything you want to—safely—with gas." In itself, gas is far less hazardous than, for example, electricity.

The reason the gas industry has too many accidents, Mr. Papich said, is because managements do not understand safety.

As a result, the gas industry each year "throws down the drain" enough money in lost wage costs alone to finance the Association's entire promotion and advertising campaign. In every case where a worker is hurt or property is damaged because of an accident, Mr. Papich said, the cost represents a management failure.

Management too often feels it has done its job when it has started a "safety program." Then it goes off and forgets about it.

Instead, Mr. Papich said, top management must keep informed on its accident prevention program continually, and remain continually identified with it.

Operating vice presidents must allow sufficient time for training of employees in safety. They also must identify themselves with the program.

Supervisors must explain safety to the workers, train them in it, and convince them of its need. The supervisor also must be responsible for using foresight to prevent accidents.

Management has about 100 different definitions of safety, Mr. Papich said, showing its vagueness on the subject. Actually, he said, accident prevention is a very tangible activity.

Mr. Papich proceeded to describe this activity as follows:

Nearly every accident is the result of a definite "accident sequence." When one knows what to look for, one can almost see an accident "begin to happen."

This sequence is composed of six factors:

1. *People.* Hereditary characteristics such as physical equipment and mentality may be distant causes of accidents.

2. *Behavior.* Acquired characteristics and attitudes may predispose toward accidents.

3. *Unsafe conditions.* Included would be such items as improper guarding, poor illumination, improper dress, and the like.

4. *Unsafe acts.* Included would be excessive speeds, taking chances, making safety equipment inoperable, and a host of other unsafe practices.

5. *The accident.* It is not always disabling or damaging; there often is only an interruption in work.

6. *The injury.* It likewise may or may not occur. Obviously, statistics show only those accidents which have resulted in damage or injury.

When these six factors are lined up together, there is a high probability that they will "go off" like a row of dominoes toppling. An accident is produced almost automatically.

A safety program consists of establishment of control over all six of these factors, so that the sequence cannot occur.

Against each of the factors, a barricade is erected, as follows:

1. Heredity—*proper selection.* Making sure that men are physically and mentally fit for every job assignment.

2. Behavior—*proper attitude.* Orientation programs and training are helpful, but in the last analysis, employees are "mirrors of management," and their attitudes reflect those of management.

3. Unsafe conditions—*reporting.* Employees must be trained to spot unsafe conditions and to report them under a regular system.

4. Unsafe acts—*safe work habits.* The companies with the best records have actual written "standard operating procedures" for every job assignment. Every employee should be trained in the procedures for the jobs to which he is assigned.

5. Accidents—*protective equipment.* Some jobs are inherently hazardous, but protective equipment can prevent injuries from occurring. Use must be enforced by supervisors.

6. Injury—*first aid.* First aid not only helps to control severity of accidents, but first aid training has a valuable by-product in that it enhances safety consciousness of workers and thus reinforces all of the other barricades.

Mr. Papich concluded with a quotation: "Safety must be a part of everything we do—our thinking, our planning, our operating. Safety is like a bicycle—if we stop pedalling, we will fall."

Fred W. Batten, vice president, The Columbia Gas System, followed with a report on "Your PAR Research."

Mr. Batten explained how the research program is conducted, and described some items being developed under current projects. Among these:

A gas baseboard room heater.

A small infra-red wall heater, employing sealed combustion.

A combination water heater and oven.

A porous-plate flame holder producing improved flame characteristics.

A new windproof pilot light.

An automatic spark ignition system with thermopile recharge design.

A spark igniter using transistor techniques.

A deepfat grease-vapor incinerator.

Test equipment used in synthetic gas production.

Buried concrete tanks for storage of liquefied natural gas or LP-gas.

Two methods of underground leak detection.

The Continental long-life engine for air conditioners, now successfully completed.

Gas turbine drive for large air conditioners.

The Onan 5-ton gas engine-driven air conditioner.

A non-destructive pipe inspection device.

A prototype fuel cell for direct conversion of chemical energy from gas into electricity.

A thermionic device for direct conversion of heat into electricity.

A thermoelectric device for direct conversion of heat into electricity.

Following Mr. Batten's presentation, the general sessions were concluded with a talk entitled "Present Practices Sell Out Utilities' Future," by Leonard Spacek, managing partner, Arthur Andersen & Company.

Mr. Spacek's address was a criticism of "flow-through" accounting practices by which utilities may show "fake" earnings at the expense of sound provisions for future needs.

Afternoon sessions Monday and Tuesday were devoted to meetings of General Management Section committees. Formal presentations included talks before the Committee on Comparison of Competitive Services delivered by Merle Orelup, Oklahoma Natural Gas Co.; W. Roger Sarno, A. G. A.; Walter B. Kirk, A. G. A. Laboratories; Robert F. Grier, The Hartford Electric Light Co.; and James H. Chenery, vice president, Alabama Gas Corp.

Mid-Pacific

(Continued from page 13)

booth at a forthcoming civic event which includes among its attractions—dog sled racing.

Virtually every speaker agreed that knowledge of consumer wants is the best possible compass to use in charting a sales course. Ray Cherry, president of Hadley-Cherry, Los Angeles building firm, viewed learning consumer wants as a joint opportunity for builder and gas appliance seller to help each other. "A manufacturer's representative has a need to educate the builder on technical points as well as sales points," he said.

From the builder's standpoint, Mr. Cherry commented:

"I feel the builder can be invaluable to you in passing along information which can guide you to creation of new and more advanced products which will find ready acceptance at the consumer level."

"Consumer wants should be used as a basis of designing home appliances," said S. E. Sweet, general manager, refrigerator division of RCA-Whirlpool Corporation.

From the American Gas Appliance Manufacturers Association came two speakers, Wendell C. Davis, association president, and managing director Harold Massey. Mr. Massey stressed that though "program activities of A. G. A. and GAMA vary, our objective is the same . . . and our objective is progress." As specific evidence that progress is being achieved he pointed out that "in the past 10 years the gas industry has gained recognition as America's fastest growing industry."

Specific problems discussed by Mr. Davis included that of antiquated local codes and ordinances "which can be regarded only as restrictive or discriminatory" and cost of transporting appliances from point of manufacturer to point of sale. Both problems are given constant attention by the association.

Gas industry and merchandising problems in the United States seemed minor compared to the daily challenges described by A. E. Garrett of the Australian Gas Light Company located in Sydney. Here an electricity-minded government offers rights which private enterprise finds difficult to meet. "We have a competitor . . . a government combination of two instrumentalities where, on the one hand, power is produced by the state electrical commission and distributed by the second utility at cost irrespective," Garrett said.

A market analysis made by his company revealed that the project builder of multiple homes of lower cost type had the best customer potentials and an all-out effort was made to get this potential business. "Our efforts proved fruitful," Mr. Garrett summarized.

Liberal help in getting appliances on the "hire-purchase" time-payment plan is given the consumer. The company also formed a subsidiary organization to purchase tracts of land, develop the land and offer to builders specific lots for housing development with the proviso that gas appliances only are to be used.

Cooperative advertising with leading project builders is also paying off, Mr. Garrett said.

From Tokyo Gas Company, Ltd., Suetoshi Iida described a Utopian situation in which his company has 1,870,000 customers with more waiting to have gas. For purposes of comparison, the huge Lone Star Gas Company of Dallas has 800,000 customers. Honolulu Gas Company has 50,000.

Mr. Iida explained that while his company installed 75,000 space (room) heaters, 40,000 ranges and cookers, 70,000 rice cookers and 6,000 refrigerators last year, the company does have competition. Electric rice cookers and refrigerators are competitive, he said.

While Tokyo Gas Company makes heavy use of radio, TV and newspaper advertising, person-to-person salesmanship is not neglected. "Our meter readers and bill collectors also play the part of salesmen . . . and when new customers apply for service we recommend they install many cocks in their house so use of gas will increase."

The conference in which gas appliance men, a prominent builder and a leading merchandising expert exchanged views came to a suitable climax. The conference marked the beginning of a major promotional campaign "Gas Week in Hawaii" and of an open house so that island builders, architects, and the public could view the appliance displays adjoining the conference room.

This put into immediate practice the advice of A. G. A.'s Stackpole that "you must glamorize your appliances" and that of GAMA's Wendell Davis who pointed out that "building a better mouse-trap would not by itself make the world beat a path to your door"—the world must be told about the better mousetrap.

Gas kitchen makes White House a home for Kennedys

(The following news story, which was carried in many newspapers across the nation last month, is reprinted by permission of Associated Press.)

President and Mrs. Kennedy are making living in the White House homelike with installation of a family kitchen, butler's pantry and spacious dining room in their private quarters.

Food no longer will have to be carried from institutional-size kitchens two stories below. The Kennedys can even whip up their own eggs on two big, stainless steel gas ranges—if they want to. And the President will have a big refrigerator handy for midnight raiding.

Workmen have been busy with remodeling on the second floor of the White House. The biggest change of all is the modern, gleaming stainless steel kitchen and butler's pantry, where there once was a bedroom and a bath.

One big former bedroom, with a fireplace on one wall, has been converted into a yellow and gold-carpeted, white-walled, elegant private upstairs dining room for the first family.

The comfortable new white and steel kitchen, once a bedroom, includes two hotel-type stainless steel ranges five feet long. There are ovens for baking and roasting simultaneously, and a special broiler for steaks and seafood. The ranges have a stainless steel hood and ventilation through the fireplace flues.

There is a commercial size, twenty-eight-cubic-foot stainless steel refrigerator and white wall and base cabinets with maple tops for preparation of food.

In setting up the butler's pantry, the Kennedys made use of plumbing already available in a former bathroom. The bathroom pipes now service a modern dishwasher and sink unit.

All the old bathroom fixtures were removed, except the bathtub, which now lies concealed under custom-made white drawers and cabinets with stainless steel tops. Across the pantry are additional wall cabinets for glassware.

Handwritten messages transmitted instantly

An electronic system, Telautograph, has reduced by 75 per cent the number of telephone calls from branch offices to the main office of The Gas Service Co., Kansas City, Mo. Without the help of electronic longhand, the main office would have had to install new lines, hire more personnel

A. J. acquires Roberts-Gordon

ROBERTS-GORDON Appliance Corp., Buffalo, N. Y. has announced its acquisition by A. J. Industries, Los Angeles, Calif., through an exchange of the common stock of the two companies. Roberts-Gordon will continue its operations under its present management as a subsidiary of A. J. Industries, with no anticipated changes in policy and practices, except that there will be greater emphasis on the development of new products and expansion of product lines. The operations of the Roberts-Gordon Appliance Corp., Ltd., Grimsby, Ontario, have been included in this consolidation.

Roberts-Gordon is a pioneer in the gas conversion burner business, having been active in the growth of this industry from its inception.

Its activity in the conversion burner field has led to the manufacture of a number of other gas heating products including furnaces, boilers, unit heaters, space heaters, outside gas lights, and, in Canada, hot water heaters.

The latest developments in rounding out the heating appliances to be added to the products manufactured by Roberts-Gordon are the introduction of a unique type of infrared sealed combustion line of gas heating equipment that is expected to open up many new fields of gas heating and the possible addition of a high-quality line of steel boilers.

Transmission company excavating a propane storage cavern

TEXAS EASTERN Transmission Corp., Owensboro, Ky., has started the mining of a 150,000-barrel underground propane storage cavern at the Little Big Inch terminal at Princeton, Ind.

It is expected that the cavern and loading facility at the terminal will serve the tristate area of southeastern Illinois, southwestern Indiana, and northern Kentucky and will be completed in time for the 1961-1962 season. With the additional new state and federal highways being constructed in this large market area, the facility will have increasing value.

Propane stored at Princeton will be transported by pipeline from Little Big Inch's multimillion-barrel underground salt dome storage center at Mont Belvieu, Texas. Differential tariffs for summer and winter loading into tank trucks will be issued in the near future. The proposed tariff will enable shippers to take full advantage of seasonal market factors, without commitment to leased underground storage. Minimum tenders will be 50,000 barrels.

Accounting

(Continued from page 22)

ually count, separate and roll for bank deposit the large amount of coin that would be removed from the dropository envelopes.

The ideal situation is to induce the owner of the store in which the dropository is located to empty the contents of the unit, depositing the cash to the utility's account in a local bank and mailing the cash stubs to the utility's cash processing office.

Some form of bonding of the store owner would also be required in an operation of this type.

Handling customers' payments under this type of approach would in a metropolitan area tend to delay the posting of the customers' cash. However, in outlying rural areas the use of a dropository unit utilizing either a messenger service operated by the utility or having the customer's payment mailed by the store owner would, in all probability, accelerate the customer's payment since it is to be presumed that payments from these areas are normally deferred until it is necessary for the consumer to go into the nearest large town for the purpose of marketing.

Cost comparison indicates that substituting self-service facilities at the location formerly manned by a teller has effected a reduction of about 40% in labor costs per item collected. In addition we have eliminated the problems associated with staffing this former one-man office, added payment convenience for customers at the new self-service location with minimum capital outlay, and—of equal significance to Brooklyn Union—we have established customer good will in that area.

Youngstown youngsters

(Continued from page 17)

Panel discussions have included such topics as: what does going steady mean; do you believe parents are too strict; drinking in high school; and what about a college education. The questions are submitted by viewers, which include adults as well as teenagers.

East Ohio's participation in Tele-Teens Productions, Inc., is but one manifestation of its interest in youth programs and projects. The Junior Achievement program, for example, is widely supported on a system-wide basis.

Recently in Cleveland, East Ohio sponsored a Greater Cleveland Junior Achievement Trade Fair where 51 Junior Achievement firms, representing 109 companies, displayed their products in Cleveland's Terminal Tower Building. This Trade Fair, modeled after industry trade expositions, was the first of its type held in the area.

Industry news

Severe winter brings record-breaking sendout

JANUARY, 1961, was the busiest month on record for the nation's gas utility companies. Gas utilities and the pipeline industry supplied a record 10,968 million therms during the month, a 10.2 per cent increase over January, 1960.

This gain of 1,014 million therms can be attributed almost entirely to the increased house-heating demand created by colder weather, new customers added to gas utility lines since last year, and the increased saturation of appliances in use. The previous all-time high was set in March, 1960, when 10,398 million therms were sold.

Residential and commercial sales rose 12.3 per cent from January, 1960. During the first month of this year, these customers used 7,414 million therms, compared to 6,603 a year earlier.

Industrial sales climbed to 3,555 million therms, a 6.1 per cent gain over January, 1960. A. G. A. points out that this increase occurred despite a 7.7 per cent decline in the industrial production index.

John C. Diehl, American Meter Company, wins Hanlon Award

THE HANLON AWARD, highest honor in the gas processing industry and one of the ranking awards of the petroleum industry, has been conferred on John C. Diehl, retired chairman of the board of American Meter Co., Erie, Pa. The ceremony took place at the 40th annual convention of the Natural Gasoline Association of America being held at the Baker Hotel, Dallas, Texas.

Mr. Diehl is the 25th recipient of the Hanlon Award, which is conferred annually by NGAA for outstanding service to the natural gasoline and gas processing industries. Donor of the award is E. I. Hanlon, chairman of the board of the National Bank of Tulsa and a pioneer in the industry.

Mr. Diehl is a native of New Oxford, Pa., and a graduate of the Massachusetts Institute of Technology. After World War I, he joined American Meter Company, becoming chief engineer in 1929. He became president of the company in 1950 and chairman of the board in 1951.

The first publication of his work, *Measurement of Gas and Liquids by Orifice Meters*, in 1922 immediately became the standard of measurement for the industry. In 1927 the best known of his numerous publications was presented to a waiting industry. This was his *Natural Gas Handbook*, which is still in use in the industry today. These and other publications by Mr. Diehl have formed the measurement basis for the bulk of industry gas contracts through the years, as well as becoming the fundamentals on which measurement refinements have been based.

Air conditioning sales manual is now available from A. G. A.

THE FIRST sales reference manual ever published on gas air conditioning is available now for general circulation from A. G. A.

The 350-page book is designed for use both as a training aid and as a reference source for salesmen. Published in loose-leaf form, it contains numerous tables and illustrations.

It was published originally for students at the air-conditioning sales school sponsored by the Gas Air Conditioning and Heating Committee of A. G. A.

Copies of *Air Conditioning Sales Reference Manual* (Catalog Number 112/I) may be obtained at $9 per copy from the Order and Billing Dept., American Gas Association, 420 Lexington Ave., New York 17, N. Y.

Please refer to catalog number.

'Breakthrough' in air conditioning announced by Statham Instruments

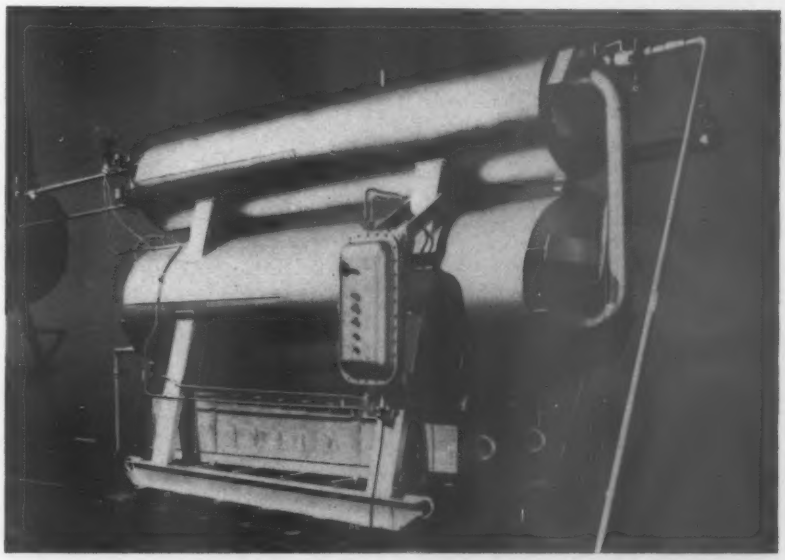
STATHAM INSTRUMENTS, Los Angeles, Calif., has announced a "major scientific breakthrough in gas air conditioning and cooling for commercial and industrial applications." According to Louis D. Statham, president of the corporation, the development results in a saving in operating costs over those of existing conventional cooling units of from 35 to 50 per cent.

A practical demonstration of the first production unit of the new gas absorption cooler was held recently before a group of visiting engineers and executives of Southern California Gas Company, Southern Counties Gas Company, and A. G. A. at Statham's manufacturing facility in West Los Angeles.

"The efficiency of the new absorption cooler," Mr. Statham has said, "is the result of five years of research in developing the principle of producing cold from a gas flame by application of the two-effect generator principle to a lithium bromide-water absorption cycle." He said that this principle is now a commercial reality.

The new gas absorption cooler was specifically developed for use as an economical air conditioning unit for large structures, such as office buildings, hotels, plants, hospitals, theaters, and auditoriums, and for many processing plant cooling applications. It can be used for home air conditioning also, according to Mr. Statham.

The first production unit of the Statham gas absorption cooler has been purchased by El Paso Natural Gas Company, for a gas processing plant cooling application.



This is the new gas absorption cooler developed by Statham Instruments. A spokesman for the firm has said that in the process utilized in the new unit there is one Btu removed from the chiller for each Btu of heat supplied to the unit, and this now makes the cooling operation as cheap as heating

Southern Gas Association convention in New Orleans, April 24-26

A PROGRAM especially planned to spark the interest of all who are associated with the natural gas industry is on tap for the Southern Gas Association's 53rd annual convention in New Orleans April 24-26.

Convention Chairman H. Vinton Potter confidently predicts the 1961 annual meeting will rank among the best of S.G.A. conventions—and offers several reasons to support his confidence.

"Variety has been the watchword in our planning for this convention," Mr. Potter says, "and I think the convention committee has put together a program that will touch upon virtually all the varied interests of gas industry personnel."

Top speakers scheduled for the General Sessions include Richard Harkness, N.B.C. Washington commentator and news analyst, who will give delegates a look "Behind the Scenes in Washington"; S.G.A. President James A. Wilson, A. G. A. President Lester T. Potter, and A. G. A. Managing Director C. S. Stackpole who will peek into the future in his visual presentation and commentary entitled "The Gas Industry in 1971 and You Are There."

A host of top flight speakers will participate in the Section programs including Dr. Willis M. Tate, president of Southern Methodist University; James F. Oates Jr., president of the Equitable Life Assurance Society; Dr. Martin Goland, president, Southwest Research Institute; P. V. Mullins, general manager of helium operations for the U. S. Department of the Interior, Bureau of Mines, Amarillo, Texas, and many others.

The convention exhibit highlights new developments in the industry including several gas turbines, a wall furnace which uses thermoelectricity to operate a circulating fan and blower, a fuel cell prototype, several items developed by United Gas Instruments Division, an epoxy-joined line pipe display, a gas-fired infrared residential space heater, and other new developments.

"Just to make this diversified program complete," Mr. Potter says, "we have planned a special business session for the ladies—an innovation at the S.G.A. convention." The special session, designed to inform wives of industry personnel about the gas industry, will feature talks by L. T. Potter, and William G. Hamilton Jr., on "The Gas Industry—The Whole Picture."

The Roosevelt and Jung Hotels will serve as joint headquarters for the meeting.

First refrigerated LP-Gas tanker under construction in Japan

THE world's first refrigerated LP-Gas tanker, which was designed by Conch International Methane Ltd., is being built for the Bridgestone Liquefied Petroleum Gas Company Ltd., a Japanese firm, by Mitsubishi Nippon Heavy Industries (Yokohama) Ltd., one of Japan's leading shipyards.

The ship will have a capacity of 180,000 barrels, equivalent to about 17,000 tons of refrigerated LP-Gas at approximately —40° F. and a service speed of 16 knots. Its special low-temperature features are based on Conch patents under a license agreement with Bridgestone that was validated by the Japanese government in May, 1960.

Conch is owned by Continental Oil Company and Canadian Shell Ltd., a company of the Royal Dutch Shell group, holding 40 per cent each, and Union Stock Yard and Transit Company of Chicago, Ill., holding 20 per cent.

The *Methane Pioneer*, the world's first liquid methane carrier, which made seven successful deliveries in 1959 from Lake Charles, La., to London, England, was designed and developed by Conch. The Bridgestone tanker will incorporate much of the experience gained from the voyages of the *Methane Pioneer*.

Scheduled for completion in early 1962, the Bridgestone tanker will be the first large-scale commercial ship to carry LP-Gas at essentially atmospheric pressure. Supplies of refrigerated LP-Gas are being obtained from Kuwait. In Japan the LP-Gas will be distributed by Bridgestone for petrochemicals and for domestic use.

New England Gas Association elects officers; Dalbeck is president

Officers of the New England Gas Association in front row are, left to right, Harold L. Dalbeck, incoming president; Gilbert J. Williams, retiring president; John F. Rich, first vice president. In back row are Guy T. Henry, second vice president; Burdette A. Johnson, treasurer; Clark Belden, managing director

HAROLD L. DALBECK, president of Gas Companies of New England Electric System, was elected president of the New England Gas Association during NEGA's 35th annual meeting in March.

Also elected to office were John F. Rich, president, New England Gas & Electric Association, first vice president; Guy T. Henry, president, Providence Gas Co., second vice president; and Burdette A. Johnson, treasurer, New England Gas & Electric Association, treasurer.

Retiring president is Gilbert J. Williams, executive vice president, The Connecticut Light & Power Co.

Highlighting the two-day meeting at Boston's Statler Hilton Hotel was NEGA's "1961 Gas Industry Panorama" on the theme "What Are These Developments Telling Us?" C. S. Stackpole, A. G. A. managing director, served as master of ceremonies for the all-afternoon program.

Featured "Panorama" speakers were L. T. Potter, president of A. G. A. and president, Lone Star Gas Co.; Wendell C. Davis, president of Gas Appliance Manufacturers Association and president, Cribben and Sexton Co.; Frank C. Smith, chairman of the board, Houston Natural Gas Corp.; Dr. Martin A. Elliott, director, Institute of Gas Technology; W. H. Dalton, managing director, Canadian Gas Association; S. F. Wikstrom, director of A. G. A.'s PAR Plan; and Robert B. Smith, assistant director of research, A. G. A.

Book on rates out

COLUMBIA University Press, New York, N. Y., has published a book, *Principles of Public Utility Rates,* by James C. Bonbright, professor emeritus of finance of the Graduate School of Business Administration and of the department of economics of Columbia University. The book concentrates on the underlying principles, rather than the technicalities, of rate determination for utility enterprises and seeks to clarify varying opinions held by economists and by professional rate makers and regulators.

Professor Bonbright contends that reasonable public utility rates, like reasonable prices in general, are rates designed to perform multiple functions as instruments of social control and thus must reflect compromise among conflicting objectives. He cites examples from different utility industries, drawing most heavily on his experience with the electric utilities.

The important problem of the determination of a company's entire rate level as measured by the standards of a reasonable return is examined in the second part of the professor's three-part work.

List April publications

INDUSTRIAL AND COMMERCIAL

• **Inert Gas Generators for Chemical Processing,** by E. J. Funk, Jr. Information Letter 121. First 25 copies, free; 26 or more copies, five cents each. First 25 copies prepaid; 26 or more, postage collect. Cat. no. 114/I.

• **Radiant Heating—Its Characteristics, Generation and Application,** by E. S. Mack. First five copies, free; six or more copies, eight cents each. Cat. no. 103/I.

• **Fact Sheet—Bethel Park High School,** by the Industrial and Commercial Advertising Committee. A sheet describing the use of gas equipment in schools. Nine cents each copy; postage prepaid. Cat. no. 53/C.

• **Fact Sheet—Hopkins Elementary School,** by the Industrial and Commercial Advertising Committee. A sheet describing the use of gas equipment in schools. Nine cents each copy; postage prepaid. Cat. no. 53/C-a.

STATISTICS

• **Monthly Bulletin of Utility Gas Sales,** December 1960. $1 per year, by subscription. No charge for postage. Cat. no. 60/S 12.

ACCIDENT PREVENTION

• **How Injuries to Gas Men Might Be Avoided,** Vol. X, March 1961, No. 1, by the Accident Prevention Committee. Deals with accident case histories. Price to members is as follows: one copy, free; two to 50 copies, ten cents each; 51 to 99 copies, seven cents each; 100 to 500 copies, five cents each. To non-members the price is 10 cents each, regardless of quantity. Postage is included in price. Cat. no. 7/AP/61-1.

Recorder puts gas use on punched tape

AN INVITATION issued by the A. G. A. Rate Committee resulted in a demonstration at a recent meeting of the committee in New York, N. Y., of a gas survey recorder manufactured by Fischer and Porter Co., Warminster, Pa.

More than 30 members of the committee, as well as many representatives of nearby gas companies, witnessed the demonstration of this new data-handling process. The recorder, which can be coupled with any gas meter, maintains a running total of gas consumption on punched tape. After a period of unattended operation, the tape can be removed and converted into punched cards. These cards are then used for computer studies.

The availability of such gas service equipment may well affect future decisions regarding gas load characteristic surveys, for the use of the recorder and associated data-translating equipment will substantially reduce the cost and time required for survey work. The outstanding advantage of such equipment is that the information is recorded in a machine-sensible form that allows data to be fed directly into a computer, without manually handling for computation and study.

Member companies of A. G. A. that are interested in receiving a demonstration are invited to contact the company directly.

U. S., Russian gas men may swap visits

NATURAL gas experts of the United States and Russia hope to exchange visits within the next five months under plans being mapped by the U. S. State Department and the Soviet Union.

The Soviet group will visit the U. S. in May and the American delegation will tour Russia in July.

A. G. A., which is assisting the State Department in planning the exchange, said arrangements are still to be finally approved by the two governments.

Itineraries in both countries are still to be decided.

However, it is hoped the delegations could visit research and planning organizations and natural gas producing, transmission and distribution installations.

The trips are being arranged under terms of an agreement for exchanges in the scientific, technical and cultural fields signed in Moscow Nov. 24, 1959. The visits must take place during 1961, according to the agreement.

Tappan gets order for 25,000 ranges

THE TAPPAN CO., Mansfield, Ohio, has announced receipt of a contract to provide approximately 25,000 ranges for apartment units in New York, N. Y., and San Francisco, Calif. This is believed to be the largest single order of ranges ever placed for immediate delivery. They will replace existing units in apartments built during the 1940's. Engineers and service superintendents personally inspected the manufacturing processes of major range manufacturers before awarding the contract.

The apartments are located in five different privately constructed communities that have been acclaimed as model urban housing developments—Parkchester, Peter Cooper Village, Stuyvesant Town, and Riverton in New York, and Parkmerced in San Francisco.

Traveling convention booth available for training

A showmobile of gas products has been touring the nation under the auspices of Rockwell Manufacturing Co., Pittsburgh, Pa. The purpose of its tour is to help gas utility personnel to become better acquainted with all aspects of gas measurement and control. It is packed with displays, literature, slide films

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

● **Algonquin Gas Transmission Corp.** has proposed a $5 million expansion plan to provide its existing customers in New England with an additional 11.5 million cubic feet of natural gas per day by November 1, 1961, and 14.1 million cubic feet daily by November 1, 1962. The natural gas facilities required for this sales effort would include 11.4 miles of 20-inch and eight-inch loop lines and the addition of 12,100 horsepower in compressor capacity. Texas Eastern Transmission would supply the increased volume of natural gas to raise system capacity to 357 million cubic feet per day.

● **American Louisiana Pipe Line Co.,** with a budget-type application approved by the FPC, will construct natural gas facilities to acquire new gas supplies as they become available. The total cost of all facilities to be constructed will not exceed $3 million, with the cost of any single project limited to $500,000.

● **Cities Service Gas Co.** has filed a budget-type construction application to add facilities during 1961 as required to take new natural gas supplies into its system. The over-all cost of the facilities to be built would not exceed $3 million, with the cost of any single project not to exceed $500,000.

● **Colorado Interstate Gas Co.** has been authorized to construct natural gas facilities having a total cost not to exceed $800,000. One project in the budget-type proposal is limited in cost to $400,000, and other projects are limited to a cost of $200,000.

● **Houston Texas Gas and Oil Corp.** and **Coastal Transmission Corp.** have been authorized to carry out a $23.4 million expansion program in a decision filed by Presiding Examiner Purdue. Houston Texas Gas and Oil Corp. will construct about 235 miles of sales lateral lines and an additional 30,000 horsepower in compressor capacity at a cost of more than $16.1 million to increase maximum day deliveries from 278 million to 371 million cubic feet of natural gas. The project of Coastal Transmission includes 71 miles of supply laterals and 12,500 additional compressor horsepower, which will, at a cost of nearly $7.3 million, increase maximum daily capacity from 274 million to 371 million cubic feet. The additional supply of natural gas will be taken by 21 new resale customers and 11 new direct sale customers. The amount of natural gas purchased in the field by Florida Power Corp. and Florida Power and Light Co. and transported by the two subsidiaries of The Houston Corp. will be raised from the previously authorized 100.5 million to 154.3 million cubic feet per day.

● **Natural Gas Pipeline Company of America** has received approval of its budget-type application to add new gas supplies when available. Single projects will not exceed a cost of $500,000, and the cost of all such projects will not exceed $3.5 million.

● **Northern Natural Gas Co.** has been authorized to construct facilities to supply two communities in Minnesota and a taconite processing plant with natural gas. To provide the service, 11.5 miles of 30-inch main line loop and nearly 60 miles of smaller diameter pipelines will be constructed, and a total of 5,400 horsepower in compressor capacity will be added at an over-all cost of $6.3 million. The Reserve Mining Company's taconite plant will take 12 million cubic feet of natural gas daily. The Iron Ranges Natural Gas Co. has been granted a third-year requirement of up to 2.7 million cubic feet per day for resale in Silver Bay and City of Two Harbors, Minn. The two communities will take up to 3.2 billion cubic feet annually on an interruptible basis.

● **Transcontinental Gas Pipe Line Corp.** has been authorized to construct and operate a pipeline loop to bypass a hydroelectric project being built by Duke Power Co. in North Carolina. The construction will include about 15 miles of 36-inch main line loop and relocation of a water-pumping station at a cost of $2.9 million. Duke Power will reimburse the company for about $1.4 million of that cost.

● **Transwestern Pipeline Co.** has been authorized to construct budget-type natural gas facilities as needed to add new gas supplies to its system. The total cost of the facilities to be constructed will not exceed $3 million, with single projects having been limited to a cost of $500,000.

● **Trunkline Gas Co.** has filed an application to construct facilities to attach new natural gas supplies when available. Single projects would not exceed a cost of $500,000, and all projects would be limited in cost to a total of $2.5 million.

Rate cases

● **Eastern Shore Natural Gas Company's** proposed $54,200 or 11.1 per cent annual wholesale natural gas rate increase has been suspended until April 17, 1961, when it may be put into effect, subject to refund. The increase, which would affect three wholesale customers in Maryland and Delaware, is intended to recover increases in the cost of gas purchased from its sole supplier, Transcontinental Gas Pipe Line Corp.

● **Mississippi River Fuel Corp.** has applied for a $896,000 or 2.7 per cent annual wholesale natural gas rate increase. The higher rates would affect 16 customers in Missouri, Illinois, and Arkansas. The need for a rate increase has been predicated on a 6.5 per cent rate of return and the desire to offset higher rates proposed by the supplier company, United Gas Pipe Line Co.

● **United Gas Pipe Line Co.** has had its $4,640 thousand or 3.7 per cent annual wholesale natural gas rate increase suspended until June 15, 1961, when it may be put into effect, subject to refund. The request for higher rates, which would affect 50 utility customers in Arkansas, Florida, Louisiana, Mississippi, and Texas, is based upon the increased cost of purchased gas and the need for a 6.75 per cent rate of return.

In other actions, FPC Examiner Law authorized **South Georgia Natural Gas Co.** to construct 2.5 miles of lateral pipelines to provide natural gas service to the towns of Sylvester and Ocilla, Ga., whose combined first-year peak-day deliveries are estimated at 679,000 cubic feet. In another case, the FPC will consider a proposal by **Tennessee Gas Transmission Co.** to purchase for more than $68 million the offshore Louisiana natural gas producing properties of the Continental and Newmont oil companies. The proposed purchase price would be spread out over a 16-year period.

SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—JANUARY, 1961

	Number	Annual Amount
Tax rate increases allowed without suspension	1	$ 196
Other rate increases allowed without suspension	72	232,512
Rate increases suspended	49	476,550
Total rate increases	122	709,258
Tax rate decreases allowed without suspension	3	4,810
Other rate decreases allowed without suspension	3	12,055
Total rate decreases	6	16,865
Total rate filings (all types)	695	—
Total rate filings acted on from June 7, 1954, to January 31, 1961	52,291	—
Rate increases disposed of after suspension (during month)	49	825,872
Amount allowed	—	810,622
Amount disallowed	—	—
Amount withdrawn	—	15,250
Rate increases suspended and pending at end of month	3,605	$170,216,715

SUMMARY OF PIPELINE COMPANY RATE FILINGS—JANUARY, 1961

	Number	Annual Amount
Increases under suspension at beginning of month	110	$418,770,500
Increases suspended during month	—	—
Increases disposed of after suspension	2	28,245,100
Amount allowed	—	13,898,500
Amount disallowed	—	14,346,600
Amount withdrawn	—	—
Increases allowed without suspension	—	—
Increases suspended and pending at end of month	108	$390,525,400

SUMMARY OF PIPELINE COMPANY CERTIFICATE FILINGS AND ACTIONS—JANUARY, 1961

	Number of Applications	Miles of Pipeline	Compressor Horsepower	Estimated Cost
Pending at beginning of month*	186	5,833	477,060	$710,564,057
Filed during month	21	1,041	128,880	154,238,438
Issued during month	15	7	2,400	21,297,214
Otherwise disposed of during month	2	279	15,950	12,830,000
Pending at end of month	190	6,588	587,590	830,675,281

* Adjusted to include amendments and supplements to applications and modifications of certificates

Cost of exploratory drilling for gas and oil keeps going up

THE AVERAGE cost and risk in dollars per well in drilling for oil and gas continued to increase in 1959 as the industry was forced to go deeper and deeper in the search for new oil and gas supplies.

The industry expended $2,651,096,000 in the drilling and equipping of 49,563 wells during 1959. With the proportion of non-productive dry holes remaining consistent at about 38 per cent, more than $820,775,000 of this was lost in 19,101 dry holes.

These totals and trends were included in a special survey of drilling costs conducted jointly by American Petroleum Institute, Independent Petroleum Association of America, and Mid-Continent Oil and Gas Association.

The survey also disclosed that gas wells cost relatively more than oil wells, even in the same depth ranges and in similar locations. Moreover, the average depth of gas wells tends to be considerably greater than that of oil wells—running almost half again as deep.

The two factors combined for an average gas well cost in 1959 of almost $101,000 compared to the average oil well cost of $52,000.

Northern Natural subsidiary plans LP-Gas pipeline from Kansas

NORTHERN GAS Products Company, a wholly owned subsidiary of Northern Natural Gas Co., Omaha, Nebr., has announced plans for the construction of an LP-Gas pipeline to transport products from its natural gas liquids extraction plant now under construction at Bushton, Kans., to markets in the area of the northern plains.

The pipeline will extend to the area of Des Moines, Iowa, where it will be connected to the pipeline system of the Great Lakes Pipeline Company. Northern Gas Products will construct terminals on its pipeline near Bushton, Kans.; Plattsmouth, Nebr.; Des Moines, Iowa; on the Great Lakes system near Mason City and Iowa City, Iowa; Rosemount, Minn.; and Prophetstown, Ill.

The 350-mile, eight-inch pipeline to be constructed by Northern Gas Products will have an ultimate capacity of approximately 40,000 barrels per day and, with the terminals, will represent an investment of approximately $12 million. The seven terminals will employ 60 persons, with a payroll of about $300,000 annually.

P. A. Gass, president of Northern Gas Products, pointed out that the pipeline system will provide a reliable source of LP-Gas for many communities not now served by an LP-Gas pipeline.

LP-Gas is serving an expanding market as an all-purpose fuel in rural areas and metropolitan fringe areas.

Appalachian Underground Corrosion Short Course June 6-8

EDWARD C. GRECO, of United Gas Corp., Shreveport, La., and incoming president of the National Association of Corrosion Engineers, will present the opening address at the sixth annual Appalachian Underground Corrosion Short Course.

The course is held annually at West Virginia University, Morgantown, W. Va. Dates for this year's school are June 6, 7, and 8, 1961. The scheduled program lists approximately 65 papers covering basic, intermediate, and advanced education of corrosion control as related to underground pipe, cable, and water systems. Ten new subjects related to these categories will be included. Also on the agenda are field demonstrations of corrosion control equipment, a three-hour open discussion of corrosion control, and exhibits of materials and equipment.

This course is considered the largest of its kind and makes educational courses available for all job levels. Further information may be obtained from John H. Alm, 2 Gateway Center, Room 605, Pittsburgh 22, Pa.

Southern California Gas Co. reorganizes sales department

MAJOR REORGANIZATION and expansion of the sales department of Southern California Gas Co., Los Angeles, Calif., has been announced. The new organization has called for the creation of two new managerial positions and an executive assistantship to enable the company to deal more effectively with increasing complexities of the gas business.

Named to the new post of executive assistant was J. C. Abram, rate engineer in the finance and rate department. He will report to vice president F. M. Foster and will be responsible for steam plant and rate and regulatory matters indirectly related to sales.

C. T. Dierker will fill the new post of manager of sales promotion, reporting to the general sales manager, P. R. Shea. Mr. Dierker, general staff supervisor of non-residential sales, has been with the uility since 1946 and has held sales and engineering posts in the company's operating areas.

W. A. Wilson will fill another new position, that of manager of division sales, and will report to Mr. Shea.

During the last five years Mr. Wilson has been division manager of the Southwest division.

He was recently named to head the company's new Riverside division.

Philadelphia Gas Works wins public relations grand award

THE PUBLIC RELATIONS office of the Philadelphia Gas Works has been named recipient of the grand award for public relations programs of 1960 by the Pennsylvania Public Relations Society. PGW is a division of The United Gas Improvement Co., Philadelphia, Pa.

Charles R. DeHaven, manager of public relations for PGW, accepted the award at a special dinner held recently in Harrisburg, Pa.

Second place went to the Pennsylvania Heart Association for a program dealing with cardiac ailments.

PGW earned the award for its 125th anniversary program conducted extensively during March, 1960, to commemorate the original authorization by Philadelphia's Common and Select Councils to construct a gas works. "The Day the Gas Works Was Born," an institutional advertisement that played an important part in the anniversary promotion also received a national award from Public Utilities Ad-Views last year.

PGW received additional honors from PPRS in the leaflet-pamphlet category and won first place for its series of cold-weather customer billing inserts.

The PPRS competition, an annual event, is judged by the faculty of the School of Journalism of Pennsylvania State University.

A record of 147 entries was entered in the 1960 contest.

Gas industry to join "Century 21" fair

IN ADDITION to being one of the largest exhibitors at the 1964 World's Fair in New York, the gas industry also will have a major exhibit at the "Century 21" World Exposition to be held in Seattle, April through October, 1962.

The Board of Directors of A. G. A., at a recent meeting in Cleveland, endorsed industry participation, and plans for the exhibit were formally announced at a Seattle Chamber of Commerce luncheon honoring Natural Gas Week in Washington State. The announcement was made by William P. Woods, president, Washington Natural Gas Company.

A corporation to be entitled "Century 21 Gas Exhibit, Inc." is now being organized. Board members of the new corporation will be gas industry leaders from both the U. S. and Canada.

Pacific Coast gas companies have indicated they would favor subscribing to Century 21 up to one-half their participation in the New York World's Fair. Further support for the exhibit would be contributed by other gas companies in the seven or eight neighboring states.

A. G. A. officers were authorized by the Board of Directors to work out a plan for implementing gas industry participation in Century 21.

Two Colorado gas companies merge

MERGER of Southern Colorado Power Company into Central Electric and Gas Company has been approved by stockholders of both corporations. Effective May 1, 1961, the combined companies will be known as Western Power and Gas Company.

The terms of the merger provide for issuance of common and preferred stock of Western Power and Gas on a share-for-share basis to stockholders of Southern Colorado after a split of the common stock of Central Electric and Gas by issuance to its common stockholders of one additional share for each five shares held. It is expected that initially the quarterly dividend rate on the common stock of Western Power and Gas will be 25 cents per share. Consummation of the merger is subject to prior approval by the Colorado Public Utilities Commission. The Nebraska State Railway Commission has already authorized the securities that are to be issued in the merger.

Upon consummation of the merger, Southern Colorado property will be operated as the Southern Colorado Power division of Western Power and Gas, with division headquarters at Pueblo, Colo.

It is not anticipated that there will be any material change in the operation of the Lincoln general office.

Houston Corporation forms subsidiary

W. J. BOWEN, president of The Houston Corp., St. Petersburg, Fla., has announced the organization of a new, wholly owned subsidiary, Coastal Production Company.

The principal offices of Coastal will be at 520 Bank of Commerce Building, Houston, Texas—the same address as that of Coastal Transmission Corporation, a natural gas pipeline subsidiary of The Houston Corporation.

Coastal Production has been organized for the purpose of participating in the acquisition, production, and exploration phases of the oil and gas industry. Initially, its activities will probably be conducted along the Gulf Coast areas of Texas and Louisiana, near the route of the parent company's subsidiary natural gas pipelines. This new company will look for opportunities for investment through the acquisition of producing oil and gas properties, as well as conduct or participate in exploration for oil and natural gas.

Mr. Bowen stated that this is another step toward diversification of investments by The Houston Corporation into related but nonregulated phases of the oil and natural gas industry. He will serve as president of Coastal Production. Other officers are H. L. Wilhite, executive vice president, and Leon M. Payne, secretary-treasurer.

Advertising executives hear Julia Meade

THREE HUNDRED advertising executives in Louisville, Ky., at a recent meeting of the Advertising Club of Louisville heard Julia Meade discuss the field of "personality" selling in which she is engaged as the television spokeswoman and ambassadress of good will for A. G. A. and the gas industry. In appreciation of her appearance before their membership, the advertisers presented Miss Meade with a set of silver book ends embellished with a statuette of a horse and a key to the city in which, with the approach of the Kentucky Derby, the horse is king.

Miss Meade told the advertising group that integrity is so important to her that if she did not believe having a beautiful, modern gas-equipped kitchen is the ultimate in modern living she would not say so.

Miss Meade's appearance before the club was arranged by Texas Gas Transmission Corp., Owensboro, Ky., whose pipeline system serves Louisville and the big river region of the nation. During her visit Miss Meade also met with a group of gas industry executives.

Now in her fifth year as the A. G. A. television spokeswoman, Miss Meade currently is seen on Monday nights on the "Barbara Stanwyck Show."

Researchers to confer

THE GORDON RESEARCH Conferences for 1961 will be held from June 12 to September 1, 1961, at Colby Junior College, New London, N. H.; New Hampton School, New Hampton, N. H.; Kimball Union Academy, Meriden, N. H.; and Tilton School, Tilton, N. H.

The conferences were established to stimulate research in universities, research foundations, and industrial laboratories. This purpose is achieved by an informal type of meeting consisting of scheduled lectures and discussion groups. Sufficient time is available to stimulate informal discussions among the members of each conference.

This type of meeting is a valuable means of disseminating information and ideas to an extent that could not be achieved through the usual channels of publication and presentation at scientific meetings. It is hoped that each conference will extend the frontiers of science by fostering a free and informal exchange of ideas among persons actively interested in the subjects under discussion. The review of known information is not desired.

Attendance at the conferences is by application. Those interested are requested to send their applications to the director at least two months prior to the date of the conference. Requests for attendance or for additional information should be addressed to W. George Parks, director, Department of Chemistry, University of Rhode Island, Kingston, R. I. From June 12 to September 1, 1961, mail for the director should be addressed to Colby Junior College, New London, N. H.

Aero-test acquires Gascool

GENE WALKER, president of Aero-Test Equipment Company, has announced the expansion of his firm through the acquisition of the assets of the Gascool division of Vector Engineering Contractors. The Gascool line of gas engine-driven air conditioning equipment will now be manufactured by the Gascool division of Aero-Test.

E. F. Bilger, former manager of Gascool at Vector, will continue in the same capacity at Aero-Test. With a background of many years' experience in the gas engine-driven air conditioning manufacturing field, Mr. Bilger is well qualified to successfully direct the future growth of Gascool as a division of Aero-Test Equipment Company.

Aero-Test has assumed all unexpired warranties on Gascool equipment and has a complete stock of repair parts and service information available for all Gascool units now in service. This includes all commercial, residential, and institutional installations.

The production of Gascool units by the Gascool Division, 8401 Chancellor Row, Dallas, Texas, will include models of 3- to 15-ton sizes with self-contained air-cooled condensors, and 7½- to 30-ton models with remote air- or water-cooled condensors. Chiller packages are available in all these capacities. In addition, 5- to 10-ton, roof-mounted combination heating and cooling units will be included. New models will be added to meet specific demands.

Personal and otherwise

Hammer, Van Osten take new titles at A. G. A.

LEONARD M. HAMMER, former manager of the A. G. A. Promotion Bureau, has been named manager of the A. G. A. Gold Star Gas Appliance Program.

He has been succeeded by Stephen J. Van Osten, whose new title will be assistant promotion manager. Mr. Van Osten had been an assistant in the Promotion Bureau since early 1960.

As manager of the Gold Star project, Mr. Hammer will coordinate a program begun two years ago to promote gas ranges. Established by A. G. A. as a buyer's guide to quality, the program is one of the largest undertakings of the gas industry. Expenditures for the national and local promotion and advertising programs supporting it are estimated to be $25 million annually.

Before joining A. G. A. in 1958, Mr. Hammer was a newspaper reporter and public relations consultant in Cleveland, Ohio. Mr. Van Osten previously was a member of the advertising staff of DuMont Television Corporation.

C. M. Hoover elected vice president of Roper; Baldwin takes new position

GEO. D. ROPER Corp., Kankakee, Ill., has announced the election by the board of directors of Charles M. Hoover to vice president and director of marketing.

Mr. Hoover joined Roper in January, 1961, as director of marketing for the gas range manufacturer.

He will be responsible for all sales, merchandising, and marketing programs for Roper appliances.

George W. Baldwin has assumed the newly created position of eastern sales manager of the corporation. He has direct responsibility for management of all territory east of Detroit, Mich., including New England and the southeast. His offices are in Philadelphia, Pa.

C. M. Hoover, vice president-marketing, said that the new position was created in line with their over-all plan to strengthen their national selling organization.

Mr. Baldwin was division manager of Roper's territories in Ohio and western New York.

He had offices in Cleveland, Ohio, before assuming his new duties.

He has been with Roper more than 35 years, serving in management capacities in Los Angeles and San Francisco, Calif., and the Pacific northwest, Washington, D. C., and Rockford, Ill.

Lindsay is vice president

R. W. Lindsay

ANNOUNCEMENT has been made by The C. A. Olsen Manufacturing Co., Elyria, Ohio, of the appointment of R. W. Lindsay, former director of marketing, to vice president in charge of sales.

He has succeeded Edward P. Hayes, executive vice president. Mr. Hayes will remain active with Olsen as marketing consultant to the president, relinquishing the heavy workload that he has carried for many years.

Prior to joining Olsen, Mr. Lindsay was associated with Crane Company as a director of marketing of the plumbing, heating, and air conditioning group. In the Crane wholesale organization he progressed from salesman, to assistant branch manager, branch manager, district manager, and general manager of wholesale sales.

South Jersey names two

SOUTH JERSEY Gas Co., Atlantic City, N. J., has announced the following personnel changes:

John R. McWilliams has assumed the position of sales promotion and merchandise manager. He will direct and administer the company's merchandise program as a function of the general office sales staff.

He will supervise the preparation of all sales department statistics and assist in the over-all planning of the company's sales promotion effort. He will report to the director of marketing.

Carl W. Allen has assumed the position of advertising and display manager. He will coordinate and administer all phases of the firm's sales promotion and institutional and merchandise advertising programs, and he will design and control the arrangement of all company sales floor and window displays. He will also advise and assist in supervision of the construction and renovation of the company's buildings and offices and assist in general promotional planning. He will report to the director of marketing.

Cal-Metal elects Bayless

K. S. Bayless

KENNETH S. BAYLESS has been elected executive vice president of Cal-Metal Pipe Corporation of Louisiana, Baton Rouge, La. Formerly vice president, sales, he has succeeded R. C. Stewart, who will return to California to resume a former association.

Howard E. Midkiff, former Tulsa district sales manager for the corporation, has been appointed sales manager to succeed Mr. Bayless.

Mr. Bayless is an experienced pipe manufacturing executive, having served in both managerial and sales capacities. A certified public accountant, he was at one time in charge of financial forecasting for Kaiser Aluminum and Chemical Corporation. He was graduated from the University of California.

R. McDowell, L. A. Brandt move up at Peoples Gas Light and Coke Company

REMICK McDOWELL has taken office as chairman and chief executive officer of The Peoples Gas Light and Coke Co., Chicago, Ill. He has been president since January 1, 1960, and is a director of the firm. At the same time Leslie A. Brandt, vice president and comptroller, has become president.

Mr. McDowell has succeeded Eskil I. Bjork, who in December, 1960, advised the board of directors that he would retire from that office March 1, 1961, his normal retirement date under the company's service annuity system.

The board elected him chairman of the executive committee effective on that date.

Mr. McDowell was elected assistant secretary two years after being employed by Peoples Gas in 1940 as executive assistant to the secretary. Later he was successively elected assistant treasurer, secretary, assistant to the chairman, vice president, and executive vice president before becoming president.

He is a director of some of the company's subsidiaries and recently was elected a director of the First National Bank of Chicago and of the Chicago Association of Commerce and Industry.

Mr. Brandt joined Peoples Gas as a staff auditor in 1934 and has served as executive office assistant in the office of vice president and comptroller, assistant statistician, budget director, and director of employee relations. He was elected a vice president in 1952 and was named comptroller in 1957.

R. McDowell

L. A. Brandt

He has also become president of Chicago District Pipeline Company, a subsidiary.

NGAA elects new officers at Dallas convention

MAX R. LENTS, vice president and general manager of The Reef Corp., Houston, Texas, has been elected president of the Natural Gasoline Association of America at its 40th annual convention in Dallas, Texas.

Vice presidents elected for 1961-1962 are G. W. McCullough, vice president of Phillips Petroleum Co., Bartlesville, Okla.; K. G. Pearce, vice president of Tenneco Oil Co., Houston, Texas; Albert Taylor, executive assistant, Amerada Petroleum Corp., Tulsa; and C. T. Wells, Jr., president, Goliad Corp., Houston, Texas.

Mr. Lents was graduated from the University of Oklahoma in 1937. In 1941 he became chief process engineer of the Cotton Valley Operators Committee, one of the earliest unitized cycling operations in the country. Later he became assistant to the general manager of that operation and of a similar unitization operation in the Haynesville, La., field. In 1946 he became assistant to the general manager of two firms—J. S. Abercrombie Company and Old Ocean Oil Company. He later became vice president and general manager of the two companies. At the time, the Old Ocean Field, one of the largest pressure maintenance projects, became the first oil field in Texas to become completely unitized. He is now vice president of The Reef Corporation and a partner in the consulting firm of Miller, Butler, and Lents.

Mr. McCullough has served with Phillips Petroleum Company since his graduation from Oklahoma Agricultural and Mechanical College in 1925.

Mr. Pearce is a graduate of the U. S. Naval Academy, class of 1934. After World War II duty as a lieutenant commander, U. S. Navy, he returned to the Carter Oil Company, and in 1947, joined The Creole Petroleum Corporation as gasoline superintendent in Venezuela, where he remained until 1952. After returning to this country, he was assistant manager of the McKamie Gas Cleaning Company at Magnolia, Arkansas, until 1954, when he joined Tennessee Gas Transmission Company. He has since served as plants manager, operations manager, and vice president of Tennessee's operating subsidiaries.

In 1959 he was named vice president of Tennessee Oil Refining Company and in 1960 vice president of its successor, Tenneco Oil Company.

Maytag promotes Flynn

C. J. Flynn

C. J. FLYNN, general service manager of The Maytag Chicago Co., Chicago, Ill., has been named assistant to the president.

He will continue to have administrative responsibility over the service and parts department, but on a "broader level," and, in addition, will handle special projects.

The Maytag Chicago Company serves Maytag dealers in the metropolitan area of Chicago.

Transco appoints Davidson

WILLIAM H. DAVIDSON, JR., Houston, Texas, has been named general attorney for Transcontinental Gas Pipe Line Corp., Houston, Texas. For 11 years he had been chief trial counsel for the company.

As general attorney, he will be responsible for the administration of the legal department. Trial work will continue to be under his supervision, but most court work will be handled by assistants.

Mr. Davidson will continue as vice president and general counsel of the firm's LP-Gas subsidiary, Trans-Southern Pipe Line Corporation. He came to Transcontinental in 1950 from the law firm of Fulbright, Crooker, Freeman, Bates, and Jaworski. He is a graduate of Rice University and Northwestern University's law school.

Barber named vice president

S. L. Barber

S. L. BARBER has been elected a vice president of Walworth Co., New York, N. Y., and president of its pipe-prefabricating subsidiary, Southwest Fabricating and Welding Co., Houston, Texas.

He has succeeded A. B. Judd as president of the subsidiary. Mr. Judd has become chairman of the board.

Mr. Barber was formerly executive vice president of Taylor Forge and Pipe Works and is president of Uni-Flex Manufacturing and Engineering, Los Angeles, Calif.

Names in the news—a roundup of promotions and appointments

UTILITY

Central Electric & Gas Company has announced six new appointments. **Carl J. Olson** has been appointed to the position of director of sales and utilization. **Earl H. Bartels** has been promoted to the position of utilization engineer in the company's sales and utilization department. **Kermit R. Peterson** is Central's newly appointed Lincoln Division sales manager. **Wayne E. Beams** has been named as the company's Lincoln Division utilization manager. Also added to the names of new appointments is **W. D. Weller,** who has been promoted to Lincoln Division office manager. Rounding out Central's new appointments is **B. R. "Dick" Sievers,** who has been named the company's executive assistant.

Three major changes have been made in The Ohio Fuel Gas Company. **P. D. Miller** has been named to a newly-created post of business promotion coordinator. He will be succeeded as dealer sales manager by **Gordon W. Collier.** Mr. Collier, Central District business promotion manager, will, in turn, be succeeded by **Bernard H. Kellogg.**

Andrew J. Sordoni, Jr., president of A. J. Sordoni Construction Company, Forty Fort, Pennsylvania, has been elected a director of The United Gas Improvement Company at the meeting of the Board of Directors.

Lee Epley has been appointed director of advertising and sales promotion for Chrysler Corporation's Airtemp Division.

South Jersey Gas Company has announced several personnel changes. **Coleman J. Kindle** has assumed the position of superintendent of operations, Glassboro Division. **R. Ernest Leland,** former superintendent of operations, Glassboro Division, now has the post of superintendent of gas supply and manufacture. **George H. Fowle** has been named the company's assistant superintendent of operations, Atlantic City Division. **Meredith H. Staulcup** is now the assistant superintendent of operations, Glassboro Division, and **Clarence A. Stinemyer** now has the title of general foreman, shop, Glassboro Division.

Charles H. Ward, of Tulsa, Oklahoma, has been appointed as director of Northern Natural Gas Company's engineering design department.

Ralph T. McElvenny, president and chief executive officer of Michigan Consolidated Gas Company and the American Natural Gas Company, has been elected to the Board of Directors of Parke, Davis & Company.

The newly elected assistant treasurer of Cities Service Gas Company is **Donald A. Hamilton,** who was recently transferred to the gas company in Oklahoma City from Arkansas Fuel Oil Corporation, Shreveport.

The Berkshire Gas Company has promoted two men within the organization. **Joseph F. Bilia** is now operations supervisor, and **John D. Regan** is assistant operations supervisor.

The Peoples Natural Gas Company has advanced **Henry N. Robb** to the position of staff assistant (budgets).

The Lone Star Gas Company has announced two important changes in its staff. **Frank J. Shramek** now holds the position of superintendent of buildings for its system offices. **Kenneth Sloan** has succeeded Mr. Shramek as chief building engineer.

Reorganization of the treasurer's department of Pacific Lighting Gas Supply Company has resulted in three promotions. As a result of the retirement of vice president and treasurer C. Edward Pearman, **Robert L. Weil** was promoted from auditor to

general auditor; **Arthur W. Low** rose from the position of chief accountant to supervisor of accounting; and **Harold T. Johnson**, former administrative aide, became the assistant treasurer.

Harry J. Schmidt has been named manager of the general accounting department of the Philadelphia Gas Works. In conjunction with this appointment, **Robert L. Barrett** and **William W. Henry** will be the assistants to the manager of general accounting.

MANUFACTURER

George W. Baldwin has assumed the newly created position of eastern sales manager of the Geo. D. Roper Sales Corporation. His offices are in Philadelphia.

Rockwell Manufacturing Company has named **Thomas I. Stacy** manager of the new valve actuator products department.

Roger B. Stevens, president of the Titan Valve and Manufacturing Company, has announced the appointment of **Taylor G. Nelson** as sales manager.

Minneapolis-Honeywell's Electronic Data Processing Division has announced two appointments. **Ralph V. Wilhelm** has assumed the title of personnel director, with **Richard T. Bueschel** taking over Mr. Wilhelm's former post as personnel manager.

Joseph R. Robinson has received the appointment of Chicago district sales manager by Hill Hubbell Company.

The Robertshaw-Fulton Controls Company has added **Robert G. Bein,** a marketing specialist, to its staff. Mr. Bein has joined the company as a market analyst.

John A. Malsi has been appointed central region resale sales manager of Worthington Corporation. He has succeeded **F. J. Reardon,** who was transferred to the company's Construction Equipment Division as eastern zone manager.

Three new members have been elected to the Board of Directors of the Selas Corporation of America. These new directors are: **William J. Meinel,** chairman of the board, **Heintz Manufacturing Company, Philadelphia; John Mulford, Esq.,** partner of Drinker, Biddle and Reath, Philadelphia; and **Gerry Swinehart,** chairman of the board, Carl Byoir and Associates, Inc., New York.

OTHER

The Houston Corporation has announced several changes to take effect at once within the company and its affiliates. **S. L. Windham** has been appointed general manager of distribution properties for The Houston Corporation. **Eldon Rolfe** will assume the responsibilities of general superintendent of pipelines for Coastal Transmission Corporation and Houston Texas Gas and Oil Corporation. **Jim Hoss** will be chief engineer for Houston Texas Gas and Oil Corporation. **Talmadge Day** will assume the responsibilities of internal auditor for The Houston Corporation and its subsidiaries.

An announcement has been made that **Donald B. Reeve** is now western regional manager for the National LP-Gas Council.

James B. Henderson, Houston, and **Donald Russell,** Spartanburg, S. C., have been elected to the Board of Directors of Transcontinental Gas Pipe Line Corporation.

The Cramer-Krasselt Company has named **Walter I. Mackey** a vice president of the firm.

OBITUARY

Stanley H. Hobson

Stanley Hobson

treasurer of Gas Appliance Manufacturers Association and chairman of the board of Geo. D. Roper Corporation died February 15.

Mr. Hobson was president of GAMA from 1949 to 1950, and chairman of the Advisory Council from 1953 to 1955.

He joined the Roper Corporation 46 years ago as director of engineering. He retired in 1947 after 14 years as president, and a year later was called out of retirement and named to the board of directors. He was again named president of Roper Corporation in 1960 until his resignation on January 1, 1961.

Mr. Hobson was well known in the gas industry and served as member of the A. G. A. Board and as member of several A. G. A. Committees.

He is survived by his wife, Marguerite, two daughters and five grandchildren.

Harry A. Grassmann

vice president of the Inner Tite Division, Yara Engineering Corp., Elizabeth, N. J. died February 26. He was an active member of the A. G. A. Operating Section Subcommittee on Cast Iron Pipe Standards from 1954 to 1960. For his devotion to the activities of that subcommittee, Mr. Grassmann was presented the A. G. A. Award of Merit.

Mr. Grassmann is survived by his wife, Lauretta, two brothers and a sister.

Robert H. Knowlton

began his utility career in 1910 when he joined the United Gas Improvement Company of Philadelphia. Mr. Knowlton became affiliated with the Connecticut Light and Power Company in 1926 as assistant to the president. The following year he was made vice president in charge of sales and also directed public relations. He was elected executive vice president in 1939, president in 1948 and chairman of the board from 1952 to 1954, continuing as a director until his death. Mr. Knowlton was also a director of EEI, New England Council, and was president of NEGA.

CONVENTION CALENDAR

1961

APRIL

16-19 •A. G. A.-Edison Electric Institute National Conference of Electric and Gas Utility Accountants, The Chase-Park Plaza Hotels, St. Louis, Mo.

18-20 •Southwestern Gas Measurement Short Course, University of Oklahoma, North Campus, Norman, Okla.

20-21 •Indiana Gas Association, Annual Convention, French Lick, Ind.

21 •A. G. A. Mid-Eastern Public Relations Workshop, Hilton Hotel, Pittsburgh, Pa.

24-26 •Southern Gas Association, Annual Convention, New Orleans, La.

27 •Pennsylvania Gas Association One-day Accounting Conference, Tally-ho Inn and Hotel, Valley Forge, Pa.

30-May 2 •Independent Petroleum Association of America, Midyear Meeting, Roosevelt Hotel, New Orleans, La.

30-May 3 •Air Conditioning and Refrigeration Institute, The Homestead, Hot Springs, Va.

•Liquefied Petroleum Gas Association, Annual Convention and Trade Show, Conrad Hilton Hotel, Chicago, Ill.

MAY

8-12 •A. G. A. Operating Section, Distribution and Production Conference, Sheraton Hotel, Philadelphia, Pa.

15-17 •A. G. A. Midwest Regional Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

17-19 •Pennsylvania Gas Association, Annual Meeting, Pocono Manor Inn, Pocono Manor, Pa.

18-19 •A. G. A. Financial Forum, Valley Ho Hotel, Phoenix, Ariz.

25-26 •A. G. A. Operating Section, Transmission Conference, Brown Palace and Cosmopolitan Hotel, Denver, Colo.

JUNE

5-6 •A. G. A. Eastern Regional Sales Conference, Pittsburgh Hilton Hotel, Pittsburgh, Pa.

6-8 •Appalachian Underground Corrosion Short Course, West Virginia University, Morgantown, W. Va.

13-14 •National Safety Council Public Utilities Section, Executive Committee, Laurentian Hotel, Montreal, Quebec, Canada

20-24 •Canadian Gas Association, 54th Annual Meeting, Banff Springs Hotel, Banff, Alberta, Canada

Personnel service

Betty Jacobsen, Editor

SERVICES OFFERED

Sales and Management—technical education and degree, combined with more than 20 years of sales management experience with gas equipment and appliance manufacturers. Widely known throughout the gas industry including gas associations, individual utility companies, and manufacturers. Have served each of these groups as special consultant on sales management and technical projects during the past five years. Salary open. Will relocate. **2014.**

Home Economist—ten years' experience in all phases of home service work for straight gas and combination company as advisor, supervisor, promotion, education; public relations work included TV and radio appearances, program development, training, writing, lectures, kitchen planning and appliances. Seeking home service director's position. BS from Cornell. Resume and references on request. Willing to relocate. **2015.**

Gas Production Engineer—your chance to help refugee from Cuba and acquire excellent engineer. Age 39. Bilingual. Fourteen years' experience in gas production but graduate electrical engineer. Highly recommended. **2016.**

Experienced Sales or Commercial Manager Available—fully schooled and experienced in all phases of utility merchandising, sales promotion, advertising, sales training, etc. Age 38, family. Will relocate. Will supply resume and personal data upon request. **2017.**

Engineering and Management—12 years experience in design, operations, construction, and maintenance of transmission and distribution facilities. Also experienced in meter shop operation, measurement and customer service training. Present position as operations manager. Prefer locating in Midwest. Complete resume upon request. **2018.**

Manufacturing Management—one of the nation's largest manufacturers of central heating and air conditioning equipment wishes to help exceptionally capable executive who must relocate. Steady progression through positions of increasing responsibility over the past 13 years has given him a broad experience in all phases of manufacturing management. A strong administrator with heavy line experience. Age 41. **2019.**

Management, Operations Engineer—25 years distribution and production management for four gas properties of 60,000 customers. Capable of full charge of medium property. Well versed in natural gas, public, customer, and employee relations, leakage control (also Conseal), corrosion control, Hasche and propane peak shaving, system layouts, LP and natural gas operations, accounting, billing, budgeting. College, excellent health, age 55. **2020.**

Individual with 25 years supervisory experience with major gas company desires **Operational or Construction Work** with gas company or company associated with gas industry. Any position considered, if experience and talents can be utilized. Outstanding record in general operations, measurement, air conditioning sales and service, gas utilization and odorization. **2021.**

POSITIONS OPEN

Engineer, Gas Distribution—graduate chemical, civil or mechanical engineer interested in the field of gas distribution; duties involve engineering, operation and promotional activities for Wisconsin utility. Write stating age, experience and salary expected. **0967.**

Gas Distribution Superintendent—midwest utility has immediate opening for a man experienced in gas distribution operations, supervising men, handling personnel, safety and labor relations problems that are associated with them. Please send a resume containing experience, education, age and salary requirements. **0968.**

Manufacturers Representative—to sell gas radiant heating system, 100 per cent infrared at 2000F. to metalworking industry for heat treating and processing Temperatures 300-2300F. Outstanding five-year history of wide acceptance by industry. Territories open in New England, New York, Philadelphia, Dallas, Milwaukee. Replies kept in confidence. Straight commission. **0969.**

Manufacturers Representative—experienced in selling space heating. New application of proven design with "no flame-out" feature infrared gas heater. For shopping centers, airports, racetracks, hangars, snow and ice removal. Nationwide territories available. Send full details. Replies held in confidence. Straight commission. **0970.**

Manufacturers Representative—to sell processing industry new type gas ovens using infrared heating. Design includes new fan for rapid and uniform distribution of heat. Ideal for heat processing glass, enamel, food, paper, textile. Straight commission. Replies held in confidence. Send details. Territories open throughout U. S. and Canada. **0971.**

Manager, Gas Distribution—experienced manager needed to assume full responsibility of sales and operations for Gulf Coast property. A minimum of five years directly related experience is required. Submit resume in confidence. **0972.**

Excellent Opportunity—open for young man, research minded; demonstrated or potential sales ability to represent national marketing research organization in utility and publishing fields. Must be intelligent, educated and possess initiative. Position is a training step for top job. Salary to start $6-8,000. **0973.**

Roy E. Jones a Chamber of Commerce leader

Roy E. Jones

A BUSY man in his own right as president of the North Shore Gas Company, Roy E. Jones has taken on an additional chore as president of the Waukegan, Ill.-North Chicago Chamber of Commerce.

Mr. Jones was elected to the post last December after serving as the local chamber's first vice-president. Among his duties are numerous speaking engagements. One of his projects as chamber president is the establishment of a two-year junior college in Waukegan.

Mr. Jones also has been active in state and national chamber work, recently receiving recognition from the U. S. Chamber of Commerce for an outstanding job enlisting new members. He helped increase U. S. Chamber strength in the Waukegan area from seven to 71.

An active member of A. G. A., Mr. Jones is a director of the association, a member of A. G. A.'s General Management Section, and a former member of the section's Managing Committee. He is also an international counsellor for Lions International and a precinct committeeman.

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